

City of Norfolk
Department of Public Works

Debris Management Plan



City of Norfolk, Virginia

Adopted

May 2008

Revised August 2014

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CITY OF NORFOLK DEBRIS MANAGEMENT PLAN

I. Authority

This Plan is developed, promulgated, and maintained under the following Federal and State statutes and regulations:

- Public Law 93-288 as amended by Public Law 100-107, the Stafford Disaster Relief and Emergency Assistance Act and in this plan as “the Stafford Act.”
- Public Law 81-920, Federal Civil Defense Act of 1950, as amended.
- CFR, Title 44, part 200 et seq.
- Virginia Emergency Services and Disaster Law of 2000

A local emergency may be declared pursuant to §44-146.21 of the Code of Virginia by the local director of emergency management with the consent of the governing body of the political subdivision. In the event the governing body cannot convene due to the disaster or other exigent circumstances, the director, or in his absence, the deputy director, or in the absence of both the director and deputy director, any member of the governing body may declare the existence of a local emergency, subject to confirmation by the governing body at its next regularly scheduled meeting or at a special meeting within fourteen days of the declaration, whichever occurs first. The governing body, when in its judgment all emergency actions have been taken, shall take appropriate action to end the declared emergency.

II. Overview

A. Background

Virginia is threatened by potential natural and technological disaster and emergency situations such as flash flooding, hurricanes, hazardous materials, terrorism, resource shortages, and other situations. The City of Norfolk is responsible for planning and emergency preparedness, response and recovery, and mitigation activities. In order to respond to these situations, the City coordinates with the Virginia Department of Emergency Management (DEM) in response to disasters, emergencies, severe weather conditions, and other catastrophic events.

The Virginia Emergency Services and Disaster Law of 2000, as amended, requires that the state, and each City develop and maintain a current Emergency Operations Plan (EOP) which addresses their intended response to such extraordinary emergencies situations.

The combination of the various manuals comprises the City’s overall Emergency Operations Plan (EOP). The City of Norfolk EOP is specifically designed to support the decision making skills for public officials for all hazards and emergency situations. This plan for the City of Norfolk is designed to meet this responsibility and to include the city in the mutually supportive statewide emergency management system. Each Department within the City of Norfolk has developed a disaster manual, specific to their roles and responsibilities with oversight from the City’s Emergency Operation Center.

The EOP establishes responsibilities for each City department and sets forth lines of authority and organizational relationships that are essential for the protection of the public. The EOP also

establishes the concepts and policies under which all elements of the City government will operate during disasters and emergencies by providing for the integration of those resources.

The procedures outlined in this Debris Management Plan (Plan) are to enable the City of Norfolk to execute its debris management mission under the City of Norfolk's EOP. The four levels of a declaration of an emergency are described below:

Level I – Involves an event likely to be within the capabilities of local government and results in only limited (does not require involvement beyond the duty officer and several assistants) need for State assistance. Typical daily activities continue while the event is monitored. Notification is limited to those State agencies that have normal day-to-day emergency responsibilities or regulatory requirements. If the event occurs during non-duty hours, the duty officer may be required to report to the EOC to monitor the situation and respond to requests for State assistance.

Level II – Involves any event that has the potential to develop into an emergency or disaster and will likely require the assistance of at least two or three City agencies. A limited staff will be in place in the EOC staffed with City personnel and those agencies essential to the response. Twenty-four hour staffing may be required. Daily activities are altered to accommodate the situation. All applicable State agencies are alerted.

Level III – Involves an event which has become, or is becoming, an emergency or disaster and requires significant City and State response and possible Federal response and recovery assistance (local government capabilities clearly exceeded). The direction and control, primary resources, mass care, and environmental and natural resources groups are at least partially staffed on a 24-hour basis in the EOC. Support agencies are alerted and most City alpha personnel are assigned to emergency/disaster functions. The governor will declare a State of Emergency. The City's EOP is implemented. FEMA Emergency Response Team A (ERT-A) and State Liaison may be requested.

Level IV - Involves a declared disaster, which requires an extensive City and State response where the State and local governments are clearly overwhelmed. The City EOC is fully staffed for 24-hour operations by all of the primary City agencies. The State requests implementation of the Federal Response Plan and the presence of the FEMA Region III State Liaison and the ERT-A, if not previously requested.

B. Purpose

This Plan has been developed to provide the framework for City government and other entities to clear and remove debris generated during a public emergency within the City limits, as well as the City interests in surrounding localities. This Plan unifies the efforts of public and private organizations for a comprehensive and effective approach to:

- Provide organizational structure, guidance, and standardized guidelines for the clearance, removal, and disposal of debris caused by a major debris-generating event.
- Establish the most efficient and cost effective methods to resolve disaster debris removal and disposal issues.

- Implement and coordinate private sector debris removal and disposal contracts to maximize cleanup efficiencies.
- Expedite debris removal and disposal efforts that provide visible signs of recovery designed to mitigate the threat to the health, safety, and welfare of residents.
- Coordinate partnering relationships through communications and pre-planning with local, State, and Federal agencies that have debris management responsibilities.

C. General Approach

The City of Norfolk is vulnerable to numerous natural and technological hazards, including severe weather and hazardous materials spills. Tropical storms, hurricanes, tornadoes, severe lightning, wind storms, hail and floods pose the highest natural threats to the City. Critical government and private facilities are potential targets for terrorist attack. The City can manage many disaster situations with internal resources. However, there are potential debris-generating events that may overwhelm the City's assets and capabilities.

This Plan establishes the framework within which the City will respond and coordinate the removal and disposal of debris generated by potential manmade and natural disasters. This Plan will also address the potential role that State and Federal agencies and other groups will take in a debris operation.

This Plan defines the roles and responsibilities of local emergency managers with respect to debris planning prior to an event and actions following a major debris-generating event.

D. Planning Basis and Assumptions

Natural disasters such as hurricanes, tornadoes, and flooding precipitate a variety of debris that includes, but is not limited to, trees and other vegetative organic matter, construction materials, appliances, personal property, mud, and sediment. Man-made disasters such as terrorist attacks may result in a large number of casualties and heavy damage to buildings and basic infrastructure. Crime scene constraints may hinder normal debris operations, and contaminated debris may require special handling. These factors will necessitate close coordination with local and Federal law enforcement, health, and environmental officials.

This Plan takes an all-hazards approach to identifying and responding to the following hazards that may pose a threat to the City of Norfolk:

- Natural Hazards – severe weather, hurricanes, tornadoes, flooding, hail, or earthquakes;
- Human-caused Events and Hazards – urban fires, special events, civil disorder, or transportation accidents; and
- Terrorist Incidents – bomb threats or attacks, sabotage, hijacking, armed insurrection, or Weapons of Mass Destruction (WMD) incidents.

The quantity and type of debris generated, its location, and the size of the area over which it is dispersed will have a direct impact on the type of removal and disposal methods utilized the associated costs, and the speed with which the problem can be addressed. Further, the quantity and

type of debris generated from any particular disaster will be a function of the location and kind of event experienced, as well as its magnitude, duration, and intensity.

For planning purposes and for pre-positioning response assets, this plan assumes that the magnitude of the event exceeds the internal capacities of the City of Norfolk.

The fact that this Plan is based on an event that exceeds the City's capacities in no way diminishes the value of the Plan for use in response to other types and categories of events. This Plan establishes a general framework that can, with minor modifications, be used in any debris-generating event.

This Plan addresses the clearing, removal, and disposal of debris generated by the above hazards based on the following assumptions:

- A major natural or man-made disaster that requires the removal of debris from public or private lands and waters could occur at any time;
- The amount of debris resulting from a major natural disaster will exceed the City's in-house removal and disposal capabilities;
- The City, in coordination through the Virginia Southeastern Public Service Authority (SPSA) will contract for additional resources to assist in the debris removal, reduction, and disposal processes;
- Federal assistance will be requested to supplement the City's debris capabilities in coordination through the Department of Public Works.

E. Federal Assistance

The Director of Public Works will request Federal assistance when the debris-generating event exceeds the City's debris clearing, removal, and disposal capabilities. The request will be submitted to the Incident Commander in the Emergency Operations Center (EOC). The Incident Commander will forward the request to the State, which will coordinate the request for a mission assignment with the Federal Emergency Management Agency (FEMA). Typically, when mission assigned by FEMA, the U.S. Army Corps of Engineers (USACE) will provide a liaison to the EOC when activated. This liaison will serve as an advisor to the EOC staff providing advice as needed and ensuring that the USACE is prepared to respond when tasked.

The USACE will alert a Debris Planning and Response Team (PRT) and the Advance Contracting Initiative (ACI) Contractor under contract for that area and have them ready to respond when a mission assignment is received. Once the USACE receives a mission assignment from FEMA, the management groups for both the PRT and ACI Contractor will be available to meet with the Debris Manager and State representatives to conduct contingency planning as required.

USACE will coordinate with the EOC staff on the use of any pre-identified debris management sites and disposal sites, and identify/acquire other sites as required to accomplish the mission assignment.

III. Debris Management Organization and Staff Responsibilities

A. Debris Response and Recovery Primary and Support Agencies

One of the primary functions of this Plan is to clearly delineate a basic organization and assign specific responsibilities. During the conduct of debris operations, many issues will arise that are not specifically mentioned in this Plan. However, responsibilities are sufficiently defined so that unexpected issues can be assigned and resolved efficiently.

Specific responsibilities of the various primary and supporting agencies are shown in the sections that follow. For further details outlining the roles and responsibilities of each city agency, see the city EOP and various department disaster manuals.

1. Department of Public Works

The Department of Public Works' (Divisions of Streets & Bridges, Environmental Storm Water Management, Waste Management, Design, Management Services, Transportation, Right-of-Way, and Surveys) responsibilities include, but are not limited to, the following with respect to any and all debris management issues:

- Designate the Director of Public Works as the Debris Manager to oversee debris clearance and removal operations in the City of Norfolk.
- Provide an EOC Liaison Officer to the City Emergency Operations Center to coordinate debris requests and actions as required.
- Provide a Debris Coordinator to the EOC staff to coordinate all agency debris assignments.
- Provide a Public Information Officer (PIO) to coordinate all media reports on debris operations.
- Provide personnel and equipment to assist in clearing major evacuation routes and access to critical facilities.
- Provide resources to inspect and repair City infrastructure pertaining to roads, sidewalks, bridges, and storm water systems.
- Provide personnel and equipment to operate and staff the Debris Contractor Oversight Team (DCOT) element of the EOC, including communications equipment, transportation, etc.
- The Debris Contractor established under SPSA, will provide personnel and equipment to remove and dispose of debris.
- Ensure that the EOC is provided all needed administrative staff and equipment support, including administrative support personnel, computers, desks, chairs, etc.
- Liaison with Virginia Department of Environmental Quality (VDEQ) to secure necessary emergency environmental waivers, legal clearances, or permits needed to establish emergency disposal collection sites.

- Establish and monitor the removal, storage, and disposal of debris at debris collection/management sites.
- Execute right-of-entry/hold harmless agreements with private property owners.
- Assist in monitoring and enforcement of environmental code violations, including illegal dumping and accumulation of solid waste on private property.
- Perform restoration of temporary debris management sites to pre-disaster conditions, including any remedial measures necessary to meet state and federal environmental requirements due to the nature of the staging or reduction operation.

Primary Points of Contact: Director of Public Works (757) 664-4600

2. Department of Recreation, Parks & Open Space Authority

The City Department of Recreation, Parks and Open Space (RPOS) responsibilities include, but are not limited to, the following with respect to any and all debris management activities:

- Provide a RPOS Debris Coordinator to the EOC staff to coordinate all RPOS debris assignments.
- Provide personnel and equipment to assist the Department of Public Works in clearing major evacuation routes and access to critical facilities.
- Provide personnel and equipment to assist in the removal and disposal of debris as directed by the Debris Manager through the RPOS Debris Coordinator.
- Provide specialized equipment and trained operators to assist in the clearing and removal of woody vegetation from along critical rights-of-way.
- Ensure that debris removal from RPOS and recreational facilities is coordinated through and approved by the Debris Manager through the RPOS Debris Coordinator.
- Ensure that the RPOS Debris Coordinator is provided all needed logistical support, including cell phones, transportation, etc.
- Ensure that the RPOS Debris Coordinator keeps the Debris Manager informed of cleanup progress and any problems encountered or expected.
- Assist in debris management site investigations.

Primary Point of Contact: Director of Recreation, Parks & Open Space (757) 441-2400

3. Fire and Emergency Medical Services

- Participate in planning, training and exercises.
- Maintain inventory of agency resources, including staff.

- Respond to fire and other emergencies at debris management sites.
- Respond to request to investigate and handle hazardous materials incidents.
- Ensure qualified environmental contractors are removing and disposing of hazardous materials such as asbestos and lead-based paint prior to demolition.
- Maintain list of all sites throughout the City of Norfolk that store extremely hazardous substances (EHS).
- Coordinate resources with various City Departments to assist with the cleanup operations and environmental issues related to chemical spills or illicit discharges.
- Assist in monitoring and enforcement of environmental code violators.
- Issue bans on open burning based upon assessment of local conditions and ensure dissemination of information to the public.
- Perform urban/ground search and rescue.

Primary Point of Contact: Fire Marshall (757) 664-6600

4. Police Department

- Assist in monitoring illegal dumping activities and other environmental code violators.
- Assist in monitoring debris management sites to ensure compliance with local traffic regulations.
- Coordinate traffic control at all loading sites and at entrances to and from debris management sites.
- Coordinate traffic control with the Department of Public Works at all areas subject to flooding.

Primary Point of Contact: Chief of Police (757) 441-5610

5. Department of Utilities

- Coordinate with the Debris Manager debris removal and disposal requirements for Departmental properties in the corporate limits of the City of Norfolk as well as City interests in surrounding localities to include yards, structures, rights-of-way, wastewater collection systems, and water reservoirs.
- Provide resources to perform damage assessment and repair City infrastructure pertaining to water and wastewater operations.
- Monitor, report and track sewage overflows and illicit discharges.

Primary Point of Contact: Director of Utilities (757) 664-6700

6. Department of Planning and Community Development (including the Building Code Official)

- Assist Neighborhood Preservation with building damage assessments.
- Issue building permits where necessary.
- Coordinate where necessary, private property debris removal and disposal requirements with the Debris Manager.
- Enforce Zoning Ordinance.
- Assist with historic and archeological site restrictions
- Function as a liaison to the Debris Manager when wetlands may be impacted.

Primary Point of Contact: Director of Planning and Community Development (757) 664-4752

7. Department of Neighborhood Preservation

- Conduct building damage assessments/inspections to determine the need to restore or repair the structure, demolition the building, or secure the structure so that it is not assessable to the general public. Refer owners to Department of Planning for necessary permits.
- Perform inspections to eliminate substandard housing, blight conditions and environmental stresses.
- Enforces the maintenance provisions of the Uniform Statewide Building Code (USBC). The USBC apply to all existing buildings, both residential and commercial, whether occupied or vacant.
- Inspect property for violations against the USBC; ensure the owner has adequate time to complete repairs. At the end of this time, if repairs have not been completed legal action may be initiated to gain compliance.
- Enforcement of applicable building regulations aimed at the protection of public health, safety and welfare.

Primary Point of Contact: Neighborhood Preservation (757) 664-6500

8. Department of Finance

When there is a specific need for financial reimbursement, and/or administrative services to support debris management, the Department of Finance is utilized to provide the following:

- Coordinate all procurement actions to include the purchase of any equipment or resources, establish any contracts, or initiate emergency procurement actions.
- Provide the means and resources needed to support emergency response and recovery.
- Forecast the need for additional funding before general operations is negatively affected.
- Maintain records of disaster-related expenses by ensuring statutory rules that apply are met.
- Properly record personnel and equipment time.
- Coordinate significant funding from multiple sources.
- Coordinates with local jurisdictions to identify sources for equipment, prepares and signs equipment rental agreements, and processes all administrative requirements associated with equipment rental and supply contracts.
- Handles injury and compensation claims.

Primary Point of Contact: Director of Finance (757) 664-4346

9. Department of General Services

The Department of General Services manages intra-governmental services of the City. This includes facility maintenance, fleet management, storehouse and distributions, security services, real property management, procurement as well as oversight of the City's parking system.

- Ensure all City-owned and operated equipment and vehicles are functioning at optimal performance. Provide quality maintenance and fueling services to ensure safe, operable vehicles and equipment in support of debris management.

Primary Point of Contact: Director of General Services (757) 664-6510

10. Virginia Dominion Power

Coordinate with the Debris Manager with regards to debris removal along electrical easements and rights-of-way to ensure that all lines are de-energized.

- Provide a debris coordinator to the EOC.
- Provide personnel and equipment to the Rapid Response Team.

Primary Point of Contact: Virginia Dominion Power 1-888-667-3000

B. Debris Response and Recovery Organization and Responsibilities

This section of the Plan provides a listing of primary debris-related responsibilities for directors and managers, as well as debris-specific assignments for tasks and issues that normally arise during debris operations.

1. Debris Manager

The Director of Public Works will assume the role of the City of Norfolk Debris Manager. This individual's responsibilities include, but are not limited to, the following with respect to any and all debris management issues:

- Overall control of debris management coordination in coordination with the EOC.
- Maintain a listing of all available Public Works equipment identified for possible debris clearing and disposal missions.
- Coordinate all Public Works debris assignments.
- Ensure that required logistical support is available, including cell phone, transportation, etc.
- Ensure that the EOC is kept informed of cleanup progress and any problems encountered or expected.
- Obtain all necessary regulatory permits for debris collection, reduction, temporary storage, and final disposal.
- Receive regular updates from the Department Debris Coordinator regarding cleanup progress and any problems encountered or expected.
- Identify agency staff members for debris management monitoring duties (Roving, Load Site, and Disposal Site Monitors).
- Provide training and refresher training for all personnel assigned to debris management monitoring responsibilities.
- Communicate timely information to the City Manager and the EOC staff regarding the status of the debris clearing, removal, and disposal operations.
- Assure that the City is represented at all meetings with other government and private agencies involved with the debris cleanup operation.
- Coordinate with appropriate County, State, and Federal agencies, including FEMA, USACE, and others as appropriate.
- Execute right-of-entry/hold harmless agreements with private property owners.
- The Debris Manager will work with the EOC to activate and implement the debris plan upon notification of an emergency.
- Appoint a Deputy Debris Manager responsible for daily operation control of the waste collection sites.

2. Deputy Debris Manager

The Debris Manager will be supported by a joint debris staff made up of personnel from the Department of Public Works and other City staff personnel. The joint staff will constitute the daily operating element of the debris management team.

- The Deputy Debris Manager is responsible for daily operational control of the waste collection sites. The Deputy Debris Manager will receive current information on the severity of the disaster from the EOC Liaison Officer located at the City EOC. All requests for debris removal or disposal from the emergency response staff will go through the EOC Liaison Officer to the Deputy Debris Manager. Requests for debris removal from public facilities and roadways will be reviewed and approved by the Debris Manager before being directed to the appropriate Debris Coordinators (Public Works and/or RPOS) to implement the request.
- The Deputy Debris Manager will appraise the extent of damage and resulting debris and issue directives to the appropriate Debris Coordinators who in turn will notify their departments to execute the tasking as defined by their department's Standard Operating Guidelines.
- The Deputy Debris Manager will ensure that all Contractor debris removal and disposal operations are properly monitored utilizing personnel assigned to the Debris Contractor Oversight Team.
- The Deputy Debris Manager will keep the Debris Manager and EOC staff informed on all ongoing debris management operations through, at a minimum, daily meetings and/or reports.
- The Deputy Debris Manager will maintain a daily journal and file on all debris related documents and issues.

3. Emergency Operations Center Debris Liaison Officer

The EOC Debris Liaison Officer will be located at the City EOC and will be responsible for coordinating with the EOC staff all requests for debris activities initiated by the City staff.

4. Department of Recreation, Parks & Open Space Debris Coordinator

The RPOS Debris Coordinator will:

- Maintain a listing of all available RPOS equipment identified for possible debris removal and disposal missions.
- Coordinate all RPOS debris assignments with the Debris Manager.
- Ensure that required logistical support is available, including cell phone, transportation, etc.
- Ensure that the Debris Manager is kept informed of cleanup progress and any problems encountered or expected.

5. EOC Staff

The EOC is organized to provide a central location for the coordination and control of all emergency management requirements. The EOC has a primary location with many secondary back-up locations. Locations for this area can be found in the City's EOP.

The EOC organizational diagram shown in Figure 1 identifies the EOC staff positions required to coordinate the actions necessary to remove and dispose of debris using both City/County and Contractor assets.

Specific EOC staff actions will include the following:

- Tracking calls, complaints and concerns of the Norfolk residents in regards to requests for debris removal.
- Making recommendations for City force and Contractor work assignments and priorities based on the recommendations made by the Debris Manager.
- Reporting on debris removal and disposal progress, and preparing status briefings.
- Coordinating with the State on debris issues affecting adjacent counties.
- Coordinating with the following Federal and state agencies in the event of a major natural or man-made debris-generating disaster that exceeds the City's capabilities:
 - Federal Emergency Management Agency (FEMA)
 - U.S. Army Corps of Engineers (USACE)
 - Local Office of the Federal Bureau of Investigation (FBI)
 - Virginia Department of Transportation (VDOT)
 - Virginia Department of Emergency Management (VDEM)
 - Virginia Department of Environmental Quality (VDEQ)

6. Public Information Officer

The PIO will develop a proactive information management plan. Emphasis will be placed on actions that the public can perform to expedite the cleanup process. Flyers, newspapers, radio, and TV public service announcements will be used to encourage public cooperation for such activities. Further details regarding the roles and responsibilities can be found in the Department of Public Works Disaster Manual Volume VI.

- Public Notice regarding the issuance of the Emergency Debris collection sites.
- Segregating Household Hazardous Waste (HHW);
- Placing disaster debris at the curbside;
- Keeping debris piles away from fire hydrants and valves;
- Reporting locations of illegal dump sites or incidents of illegal dumping;
- Segregating recyclable materials; and
- Disseminate waste pickup schedules.

7. Code Enforcement / Demolition Team Leader

- Conduct building damage assessments/inspections to determine the need to restore or repair the structure, demolish the building, or secure the structure so that it is not assessable to the general public. Refer owners to Department of Planning for necessary permits.
- Perform inspections and general code enforcement to eliminate substandard housing, blight conditions and environmental stresses.
- Enforces the maintenance provisions of the Uniform Statewide Building Code (USBC). The USBC apply to all existing buildings, both residential and commercial, whether occupied or vacant.
- Inspect property for violations against the USBC; ensure the owner has adequate time to complete repairs. At the end of this time, if repairs have not been completed legal action may be initiated to gain compliance.
- Enforcement of applicable building regulations aimed at the protection of public health, safety and welfare.

8. Building Code Official

- Assist Neighborhood Preservation with building damage assessments of structures per FEMA regulations.
- Issue building permits where necessary for repair or demolition.
- Coordinate with the State and FEMA Public Assistance officers regarding demolition of private structures and removing debris from private property.
- Inspect and enforce Zoning Ordinance.

IV. *Debris Management Response and Recovery Operations*

The Debris Manager will be the single point of contact to coordinate and control all personnel and equipment responding to a major debris-generating event. This Plan provides guidance for the efficient and effective control and coordination of initial debris assessments through debris clearance, removal, and disposal operations.

A. Damage Assessment Teams

The City Debris Manager is responsible for coordinating impact assessment for all City public structures, equipment, and debris clearance immediately following a large-scale disaster. Impact assessments are performed by Damage Assessment Teams and used to prioritize impacted areas and resource needs. The teams will be composed of City personnel from various Departments and coordinated through the EOC.

The Debris Manager will have the primary mission of coordinating the efforts of departmental personnel to identify debris impacts on critical roads and make initial estimates of debris quantities. Based on this prioritization, the Debris Manager will issue urgent assignments to clear debris from at least one lane on all evacuation routes and identified primary and secondary roads to expedite the movement of emergency service vehicles such as fire, police, and medical responders.

Damage Assessment Teams will conduct initial zone-by-zone windshield surveys to identify the type of debris and to estimate amounts of debris on the roadways and on private and public property. The results of the windshield surveys will be provided to Debris Manager and to the EOC located at the City EOC.

The Debris Manager will establish initial priority for debris clearance based upon the following ranking as provided by the Damage Assessment Teams:

- ☐ Extrication of people.
- ☐ Major flood drainage ways.
- ☐ Egress for fire, police, and Emergency Operations Center.
- ☐ Ingress to hospitals, jail, and special care unit.
- ☐ Major traffic routes.
- ☐ Supply distribution points and mutual aid assembly areas.
- ☐ Government facilities.
- ☐ Public Safety communications towers.
- ☐ American Red Cross shelters.
- ☐ Secondary roads to neighborhood collection points.
- ☐ Access for utility restoration.
- ☐ Neighborhood streets.
- ☐ Private property adversely affecting public welfare.

During the debris clearance and removal process, the EOC staff will be responsible for coordinating with the Debris Coordinator and other utility companies (such as telephone, electric and cable TV) as appropriate to ensure that power lines do not pose a hazard to emergency work crews.

B. Forecasting Debris Volume

The estimated debris volumes for the City of Norfolk come directly from the Army Corps of Engineers model, originally done in 2002 as part of the Hampton Roads Planning District Commission (HRPDC) emergency planning model. For details pertaining to the PDC Model, see the Attachment J in this volume. The volume was reassessed post Hurricane Isabel to be included

in the SPSA 2013 RFP outlined in part IV.G.7 of this document, Debris Removal, Reduction and Disposal Hurricane & Other Disasters, April 1, 2013 – March 31, 2017.

When developing the SPSA Debris Contract in 2013, it was estimated that the Hampton Roads Region would plan for the anticipated impacts of a Category 2 “wet” hurricane. However, SPSA also included the management of debris created by all other types of man-made and natural disasters within the scope of the contract. For further details outlining the contractor requirement, please see the SPSA Request for Proposal, Debris Removal, Reduction and Disposal Hurricane & Other Disasters, April 1, 2013 – March 31, 2017.

C. Pre-Event Preparation

To guarantee preparation is established immediately prior to an event, the Director of Public Works will review and initiate the pre-event check list with Department staff to ensure all activities for debris management are organized.

Thirty Days or More Prior to an Event:

The Department will ensure at a minimum thirty (30) days or more prior to an event, the following activities are addressed:

- ☐ Verify all necessary Contracts have been established and up-to-date. Copies of all contracts described below may be found in the Public Works Director Office.
 - SPSA Debris Removal, Reduction & Disposal Hurricane & Other Disasters, April 1, 2013 – March 31, 2017
 - SPSA Monitoring and Management Services or Debris Removal, Reduction and Disposal and other Disaster Response Preparedness Related Services
 - City of Norfolk Inspection Services for Disaster Response
 - City of Norfolk Emergency/Non-Emergency Environmental Response and Disposal Services – PetroChem Recovery Inc.
 - City of Norfolk Disposal Service - Holland Landfill
 - City of Norfolk Disposal Services - Clearfield
 - City of Norfolk HHW Disposal - EcoFlow
- ☐ Identify and confirm potential Temporary Debris Storage and Reduction Sites (TDSRS) and Citizen Drop Off Sites (CDS).
 - Site Selection Criteria for TDSRS:
 - >100 yards from Wetlands
 - >200 yards from Open Waters
 - >200 yards from Schools/ Residential Areas
 - Site Selection Criteria for CDS:
 - >100 yards from Wetlands
 - >200 yards from Open Waters
 - >50 yards from Schools
- ☐ City intends to utilize an automated debris management and tracking system. In case of system failure or in those cases associated with minor storms, the City is prepared to print 1,000 or more quadruple carbonless Debris Collection, Hauling and Disposal Tickets. These tickets will be used by City trucks and other City contractor trucks.
- ☐ Print and maintain 25-copies of the overall City GIS maps indicating

Planning Districts.
Arterial and Interstates
Secondary Roads
Waterways
Airport Runways and Tarmacs
Railroad Tracks

- ☐ Certify contractor and City equipment/trucks and outfit with electronic registering equipment to be used with the Automated Debris Management System.
- ☐ If applicable based on storm predictions obtain carbonless preprinted Debris Collection Ticket books to be distributed in case the electronic ADMS cannot or is not initiated immediately.
- ☐ Duplicate or create media advertising to be published in the Virginia Pilot "Compass" ads and distribute as Trash Container Hangers. Examples can be found from those used during Hurricane Isabel in 2003 or the November Nor'easter 2009.

Seven Days or Less Prior to an Event:

The Department will ensure at a minimum seven (7) days or less prior to an event, the following activities are addressed:

- ☐ The Division of Environmental Storm Water Management will notify DEQ-TRO office of intentions to utilize TDSRS and CDS sites by phone, 757-518-2000. Documentation of date, time and individuals notified is recorded. Verbal approval to move forward with permitting and TDSRS set up must be obtained from DEQ personnel.
- ☐ The Division of Environmental Storm Water Management will commence the formal application process for the permits for the temporary waste collection sites, including public notification. The applications will be submitted to DEQ as soon as possible for review and approval.
- ☐ Coordinate with Financial Management Bureau to match future FEMA work order submissions.
- ☐ Prepare TDSRS sites entrance and set up any preliminary erosion and sediment controls measures. Follow the Temporary Disposal Storage and Reduction Site Checklist to ensure compliance with all requirements.
 - Install stone apron and access roads if necessary
 - Procure silt fencing if necessary
 - Mow grass if necessary
 - Procure separation barrier if necessary
- ☐ Identify Project Management Staff from various City agencies
 - Department of Public Works
 - Department of Utilities
 - Division of Parks and Urban Forestry
- ☐ Notify SPSA of Contract activation. Select one or more of the pre-approved contractors to complete the clean-up work. Coordination must be made on a regional effort.
- ☐ Make initial contacts with contractor

Identify assets available for response
Pre-positioning of Equipment and Personnel
Identify time frame for response
Prioritize TDSRS setup

- ☐ Identify assets available for response
Pre-positioning of Equipment and Personnel
Identify time frame for response
Prioritize TDSRS setup
- ☐ Notify the Environmental Response Contractor – PetroChem Recovery System or EcoFlow
Identify availability for services of large scale clean-up and HHW pick-ups and disposal.
- ☐ Notify the Inspection Services contractor
Identify staffing availability
Develop Planning Guide for Initial response
- ☐ Issue Task Orders to all Contractors

D. Phase I – Initial Response

For ease of control and coordination, debris management operations are divided into two phases.

Phase I will be implemented immediately after a debris-generating event to open emergency evacuation routes and roadways to critical facilities and affected neighborhoods. The major emphasis during this phase is to simply push debris from the traveled way to the right-of-way or curb. This activity is commonly referred to as Debris Clearance. Little or no effort is made to remove debris from the right-of-way. Maps and details for the initial phase of clean-up can be found in Volume I Tab 2.

The Department of Public Works, in coordination with RPOS and Utilities will be responsible for implementing all Phase I activities. Requests for additional assistance will be submitted to the EOC.

Phase I activities include:

- Implementation of the Debris Management Plan.
- Determination of incident-specific debris management responsibilities.
- Establishment of priorities based on evacuation needs and prediction models.
- Identification and procurement of debris management sites.
- Activation of pre-positioned contracts, if necessary to support Phase I clearance operations.
- Implementation of Public Information Plan.
- Coordination and tracking of resources.

- Formal documentation of costs.

E. Phase II - Recovery

Phase II will be implemented within two to five days following a major debris-generating event, and will encompass the processes of debris removal and disposal. Debris contractors are required to begin work 72-hours after notification of initiation of work as previously established by the terms of their contract. This delay is normal and allows time for affected citizens to return to their homes and begin the cleanup process. Debris must be brought to the rights-of-way or curb to be eligible for removal at public expense.

The Debris Manager will be responsible for implementing all Phase II activities with support as required from the EOC. All debris removal and disposal operations will be coordinated by the Debris Manager. Phase II may be quite lengthy as disaster recovery continues until pre-disaster conditions are restored.

Phase II activities include:

- Activation of pre-positioned contracts.
- Notification to citizens of debris removal procedures.
- Activation of debris management sites.
- Removal of debris from rights-of-way and critical public facilities.
- Movement of debris from debris management sites to designated receiving facilities.
- Final documentation of costs for reimbursement, as applicable.

F. Phase II Debris Removal and Disposal Overview

The general concept of debris removal operations includes multiple, scheduled passes by each critical site, location, or right-of-way. This manner of scheduling debris removal allows residents to return to their properties and bring debris to the edge of the right-of-way as property restoration proceeds.

The City has been divided into zones to control and expedite inspection and debris-removal and disposal operations.

G. Phase II Debris Removal and Disposal Operations

The Debris Manager and staff will coordinate debris removal and disposal operations for all portions of the City. (Volume I Tab 2). Phase II operations involve the removal and disposal of curbside debris by City forces and/or Contractor crews. All City hired debris removal and disposal Contractor operations will be overseen by the Debris Monitoring and Management Services Team and will follow the general procedures:

- Trucks shall load debris in the area designated by the assigned inspector

- Inspectors and/or Operators will utilize an Automated Debris Management System (ADMS) for electronic tracking of all data and reporting elements required for reimbursement and payment of performed work. ADMS will provide real-time or same day transmission of electronic ticket data.
- Electronic load tickets will be generated at the point of debris loading into the transport container. Paper tickets will be optional for minor storms. At a minimal the system will produce a load ticket describing the following criteria:
 - Point of Origin
 - Type of Debris
 - Date and Time
 - Right of Entry or Work Order Number
 - Ticket/Tower personnel credentials
 - Record digital images of debris, location, and/or other images selected
- If the Debris originates from a major arterial, then the ticket should be marked FHA
- The Truck will proceed to the TDSRS site
- Upon entering the TDSRS site, the monitoring inspector will verify and document load information on the ADMS.

Under this Plan, mixed debris will be collected and hauled from City permitted waste collection/reduction sites to designated receiving facilities. Clean woody debris will be hauled to the nearest designated vegetative debris management site for reduction.

The primary tracking mechanism for all debris loaded, hauled, and disposed of under this plan will be the ADMS system unless minor storms occur. For minor storms, paper tickets may be used. Electronic load tickets will be initiated at pickup sites and closed-out upon drop-off of each load at a debris management site or designated receiving facility. Electronic load tickets will serve as supporting documentation for Contractor payment as well as for requests for reimbursement from federal grant programs (FEMA) and mutual aid recipients.

1. Debris Monitoring and Management Services Team

The Debris Monitoring and Management Services Team is responsible for the coordination, oversight, and monitoring of all debris removal and disposal operations performed by City forces and private Contractors.

The Debris Monitoring and Management Services Team supervisor and team members will be detailed from Public Works employees, as well as Monitoring Contractors.

The Debris Monitoring and Management Services Team specific responsibilities include the following:

- Planning and conducting debris management site inspections, quality control, and other Contractor oversight functions.

- Receiving and reviewing all debris load tickets that have been verified by a Disposal Site Monitor (see description below).
- Making recommendations to the Debris Manager regarding distribution of forces and Contractor work assignments and priorities.
- Reporting on progress and preparation of status briefings.
- Providing input to the EOC on debris cleanup activities and pickup schedules.

The Debris Monitoring and Management Services Team will oversee the activities of three types of monitors. The functions and responsibilities of the field monitors are described below.

a. Roving Monitors

A team of roving monitors will be assigned to specific Debris Control Zones or to a specific Contractor depending upon the distribution of work assignments. The Roving Monitors' mission is to act as the "eyes and ears" for the Debris Manager and Debris Monitoring and Management Services Team to ensure that all contract requirements, including safety, are properly implemented and enforced.

Staff to fulfill the Roving Monitor positions will be provided by the Department of Public Works, other department personnel or contractors. Roving Monitors will have the authority to monitor Contractor operations and to report any problems back to the Debris Monitoring and Management Services Team. Roving Monitors may request contract compliance, but do not have the authority to otherwise direct Contractor operations or to modify the contract scope of work.

Roving Monitors will monitor debris operations on a full-time basis and make unannounced visits to all loading and disposal sites within their assigned debris management zone(s). In addition, Roving Monitors shall do the following:

- Assist in the measuring and photographing of all trucks and trailers to be used in debris removal operations.
- Obtain and become familiar with all debris removal and disposal contracts for which they are providing oversight.
- Observe all phases of debris management operation, to include loading sites, debris management sites, and final receiving facility sites.
- Prepare a daily written report of all Contractor activities observed to include photographs.
- Periodically monitor each debris management site to ensure that operations are being followed as specified in the applicable Debris Removal and Disposal Contract with respect to local and Federal regulations and this Debris Management Plan.

Roving Monitors will also submit daily written reports to the Debris Monitoring and Management Services Team outlining their observations with respect to the following:

- Is the Contractor using the site properly with respect to layout and environmental considerations?
- Has the Contractor established lined temporary storage areas for materials that can contaminate soil and groundwater? Household hazardous waste may not be collected at the permitted TDSRS sites or CDS; however HHW may be collected at designated facilities (see HHW section IV.G.3 of this report)
- Has the Contractor established environmental controls in equipment staging areas, fueling, and equipment repair areas to prevent and mitigate spills of petroleum products and hydraulic fluids?
- Are plastic liners in place under stationary equipment such as generators and mobile lighting plants?
- Has the Contractor established appropriate rodent control measures?
- Has the Contractor establish procedures to mitigate dust, noise, and traffic flow?

Roving Monitors' reports will also include written observations at loading sites, disposal sites, and the locations of any illegal dumping sites. If the monitor sees a problem they are to notify the Debris Monitoring and Management Services Team immediately and take photographs of the site.

b. Load Site Monitors

Load Site Monitors will be stationed at designated Contractor debris loading sites. The Load Site Monitors' primary function is to verify that debris being picked up is eligible under the terms of the contract.

Load Site Monitor positions will be staffed from the Department of Public Works and supplemented by other City department personnel and contractors depending on the magnitude of the debris-generating event. Load Site Monitors will be assigned to each Contractor's debris loading site within designated Debris Control Zones, and will initiate and sign load tickets as verification that the debris being picked up is eligible.

c. Disposal Site Monitors

Disposal Site Monitors will be located at both debris management sites and designed disposal facilities as identified by the Debris Manager through out the recovery process. The Disposal Site Monitors' primary function is to ensure that accurate load quantities are being properly recorded on load tickets.

At each debris management site and designated disposal site, the Contractor will be required to construct and maintain a monitoring station tower for use by the Disposal Site Monitor. The Contractor will construct the monitoring station towers with a floor elevation that affords the Disposal Site Monitor a complete view of the load bed of each piece of equipment being utilized to haul debris. The Contractor will also provide each site with chairs, table, and portable sanitary facilities.

The Disposal Site Monitor will estimate the quantity (in cubic yards) of debris in each truck/trailer entering the selected temporary debris management site or designated disposal facility and will record the estimated quantity on the debris load tickets. The Contractor will only be paid based on the number of cubic yards of material deposited at the disposal site as recorded on debris load tickets. This is to be done on all types of debris removal contracts and force account vehicles.

The Disposal Site Monitors will be stationed at all debris management sites and designated disposal facilities for the purpose of verifying the quantity of material being hauled by the Contractor. The Disposal Site Monitor will be responsible for closing out and signing each load ticket and returning a copy to the Debris Monitoring and Management Services Team at the end of each day.

2. City Garbage Collection Forces (Division of Waste Management)

City Garbage Collection forces will continue to pickup refuse in accordance with current procedures, routes, and removal schedules. They will not haul disaster debris unless expressly authorized by the Debris Manager.

3. Household Hazardous Waste

Household Hazardous Waste (HHW) must be separated from all other types of waste. Residents are to transport HHW to designated sites for recycling or proper disposal. Residents will be provided information on locations and hours of drop-off points for disposal of HHW.

If HHW is found while segregating mixed or other debris, the following steps are necessary. HHW will not be hauled to a debris collection site.

- HHW material found is separated and reported to the site monitor.
- Material identified as HHW segregated from remaining debris using a method that will allow the remaining non-HHW debris to be processed.
- Efforts will be made to determine the source of the HHW dumping.
- If no responsible party is discovered, City waste collection forces will be dispatched to dispose of HHW.

Household Hazardous Waste (HHW) will be collected at the designated facilities, Norfolk Transfer Station and Waste Management Pineridge Facility. The Norfolk Transfer Station located at 3136 Woodland Avenue accepts HHW at this location the first Saturday and fourth Wednesday of each month between the hours of 9:00 a.m. and 12:00 p.m. Norfolk residents may also drop off household hazardous waste at The Division of Waste Management at 1176 Pineridge Road, Monday through Saturday, between 10:00 a.m. and 2:00 p.m.

Household hazardous waste items accepted at any of SPSA's HHW facilities include the following:

Cleaning Products

- Drain Cleaners
- Wood & Metal Cleaners/
Polishes
- Toilet Cleaners

Indoor Pesticides

- Ant Poisons
- Cockroach Poisons
- Flea Repellants
- Household Insecticides

Automotive Products

- Motor Oil
- Fuel Additives
- Carburetor & Fuel Injector
Cleaners

- | | | |
|---|---|---|
| <ul style="list-style-type: none">• Tub, Tile, Shower Cleaners• Bleach• Pool Chemicals• Oven Cleaners• Degreasers | <ul style="list-style-type: none">• Moth Repellants• Mouse & Rat Poisons | <ul style="list-style-type: none">• Air Conditioning Refrigerants• Starting Fluids• Automotive Batteries• Transmission & Brake Fluid• Antifreeze• Gasoline/Diesel Fuel |
|---|---|---|

Workshop / Painting Supplies

- Adhesives & Glue
- Furniture Strippers
- Oil or Enamel Based Paint
- Stains & Finishes
- Paint Thinners & Turpentine
- Paint Strippers & Removers
- Photographic Chemicals
- Fixatives & other Solvents

Outdoor Lawn & Garden

- Herbicides
- Insecticides
- Wood Preservatives / Fungicides
- Pesticides
- Fertilizer
- Driveway Sealer

Batteries

- Rechargeable Small Sealed Lead Acid Batteries
- Rechargeable Nickel Cadmium (Ni-Cd) Batteries
- Rechargeable Nickel Metal Hydride (Ni-MH) Batteries
- Rechargeable Lithium Ion (Li-ion) Batteries
- Alkaline / Zinc Carbon Batteries

Other Flammable Products

- Propane Tanks & Cylinders
- Lighter Fluid
- Home Heating Oil
- Kerosene
- Aerosol Cans
- Gas / Oil Mixtures
- Nail Polish Removers

Mercury

- Mercury Containing Thermostats
- Mercury Thermometers
- Fluorescent Light Tubes

Miscellaneous

- Used Cooking Oil (vegetable, peanut, etc.)

Hazardous waste from business or industry will not be accepted at the waste collection sites. However, the City of Norfolk Public Works personnel will coordinate with Virginia DEQ and SPSA officials for the collection of eligible industrial or commercial hazardous waste resulting from the disaster.

4. White Goods

The City of Norfolk, Waste Management Division currently provides curbside collection of White Goods and utilizes a private disposal facility for recycling and disposal.

5. Electronics

The City of Norfolk accepts small household electronics, including hair dryers, televisions, computers, printers, monitors, video games, telephones, and other small electronic items with a cord. These items may be dropped off and recycled at these City of Norfolk locations:

The Division of Waste Management at 1176 Pineridge Road, Monday through Saturday, from

10:00 a.m. to 2:00 p.m. and the Division of Towing and Recovery at 1195 Lance Road, 24 hours a day, seven days a week.

6. Utility Company Property

Virginia Dominion Power and other utility crews will remove and dispose of all utility related debris such as, power transformers, utility poles, cable, and other utility company material.

7. Equipment Assets

A table summarizing the equipment that the Department of Public Works currently has in inventory that could be used to assist with debris removal is included in Volume II Appendix of this disaster manual.

8. Contractor Debris Removal and Disposal Operations

The City of Norfolk recognizes that disasters may generate debris of types and quantities that exceed the City's capabilities. Thus, the City of Norfolk will work through the Southeastern Public Authority of Virginia (SPSA) to implement a pre-positioned regional contracting process in order to have Contractors on stand-by that will respond within a pre-determined period to assist in requested aspects of the debris operation. In 1976, by agreement of the Southside Hampton Roads local municipalities, the Southeastern Public Service Authority became the regional solid waste disposal system to include a resource recovery operation.

SPSA, with active participation from the City of Norfolk, has contracted with multiple firm(s) holding pre-positioned debris removal and disposal contract(s) and advise them of impending conditions. The scope of the pre-positioned contract provides for the removal, reduction and lawful disposal of all hurricane and disaster debris, excepting household, industrial, or commercial hazardous waste. Debris removal will be limited to City-maintained streets, roads, and other public rights-of-way based on the extent of the disaster. Debris removal will be limited to disaster related material placed at or immediately adjacent to the edge of the rights-of-way by residents within designated Debris Control Zones.

Each Contractor, upon receipt of notice to proceed, will mobilize such personnel and equipment as necessary to conduct the debris removal and disposal operations. All Contractor operations will be subject to review by SPSA or the municipalities covered within the scope of the agreement.

The Contractor will make multiple, scheduled passes of each site, location, or area impacted by the disaster. Schedules will be provided to the City of Norfolk Communications department for publication and notification by the news media.

The load ticket, coupled with inspections by Roving, Load Site, and Disposal Site Monitors, will be the primary mechanism for monitoring Contractor performance and tracking quantities for pay purposes.

Federal support will be requested if the incident is beyond the City's capability and its Contractors. The USACE may be tasked by FEMA through the mission assignment process to provide the necessary support to the City of Norfolk.

Procurement Procedures

The city will follow city procurement rules and regulation for all debris relate procurement. The city has various contracts procured through competitive bid to support debris removal. These include debris removal service, debris inspection services, hazardous material removal and white good removal. Copies of the specifications, bids and contracts are found in the Disaster Manual Contract Volume. In addition, there are various price agreements in place and city consulting services have clauses for emergency services. Procurement of all debris related services will comply with current City and State procurement ordinances.

Any emergency procurement shall be approved by the City Manager and Procurement Officer as per city ordinance.

Debris removal procurement –regional contract.

SPSA developed contracts from qualified vendors for hurricane / disaster debris removal, reduction and disposal valid for periods April 1, 2013 – March 31, 2017.

The intent of the contract is to provide removal, reduction and disposal of hurricane and disaster debris to SPSA and the cities and counties in the Southside Hampton Roads Area:

City of Chesapeake
City of Franklin
City of Norfolk
City of Portsmouth
City of Suffolk
City of Virginia Beach
Isle of Wight County
Southampton County
Surry County
Virginia Department of Transportation (VDOT), Hampton Roads District

A Review board comprised of a single member from each entity listed above, including the City of Norfolk reviewed the proposals based on the following criteria:

- | | | |
|----|---|-----|
| a. | Qualifications of firm | 30% |
| | Qualifications of firm | |
| | References | |
| | Experience | |
| | Virginia Business License | |
| b. | Technical | 30% |
| | Quality & quantity of physical resources | |
| | Understanding of scope of work | |
| | Quality of overall proposal | |
| c. | Financial | 30% |
| | Reasonableness of proposed price | |
| | Financial resources and capabilities | |
| d. | Other | 10% |
| | Location of firm relative to SPSA site | |
| | Previous contracting experience with SPSA, or Authorized Agencies | |

Further criteria outlining the basis for the review process can be found upon request in the SPSA Request for Proposal for Hurricane & Other Disasters Debris Removal Reduction & Disposal.

SPSA awarded contracts to the following four vendors to expire in March 2017:

Ceres Environmental Services, Inc.
5590 Broadcast Court, Suite 110
Sarasota, Florida 34240
Office: (800) 488-4424
Fax: (866) 228-5636

AshBritt, Inc.
480 South Andrews Avenue, Suite 103
Pompano Beach, FL 33069
Office: (954) 545-3535
Fax: (954) 554-3585
www.ashbritt.com

Gulf Equipment Corporation
CrowderGulf Disaster Recovery and Debris Management
5434 Business Parkway
Theodore, Alabama 36582
Office: (800) 992-6207
Fax: (251) 459-7433

Phillips & Jordan, Inc.
P.O. Drawer 604, 191 P&J Road
Robbinsville, North Carolina 28771
Office: (828) 479-3371
Fax: (828) 479-3010

9. Temporary Debris Management and Landfill Sites

The City recognizes the economic benefits of debris volume reduction, and will realize this benefit through the use of local debris management sites for processing of clean woody debris. The City has identified pre-designated vegetative debris management sites for the sole purpose of temporarily storing and reducing clean woody debris through grinding.

Contractors will operate the debris management sites made available by the City. Each Contractor will be responsible for all site setup, site operations, rodent control, closeout, and remediation costs at each of its sites. The Contractor is also responsible for the lawful disposal of all by-products of debris reduction that may be generated. Material must be recycled or reused when applicable.

The Contractor will restore the debris management sites as close to the original condition as is practical so that it does not impair future land uses. All sites are to be restored to the satisfaction of the Debris Manager with the intent of maintaining the utility of each site.

Contractors are also expected to haul and manage construction and demolition (C&D) waste. C&D is non-putrescible waste materials generated during the post-disaster cleanup, repair, or

demolition of residential and non-residential buildings, and roads and buildings. C&D includes, but is not limited to, concrete, asphalt, wood, metal, gypsum, wallboard, and roofing, as well as discarded furniture, furnishings, appliances, plumbing fixtures, etc., stacked by curb or shoulder:

- Separate C&D debris from solid, vegetative and household hazardous waste.
- Separate metal and appliances from C&D debris.
- Separate containerized liquids from C&D debris, place in sealed containers and dispose of at properly permitted facilities.
- Separate recyclable from non-recyclable C&D to the maximum extent practicable. C&D materials will be hauled to debris management sites for temporary sorting and storage until final disposal arrangements are made.

It is important to note that all material deposited at debris management sites will eventually be taken to a properly permitted disposal facility. Under certain circumstances, the Debris Manager may direct Contractors to bypass C&D debris management sites and approve the hauling of mixed C&D debris directly to a properly permitted disposal facilities.

10. Load Ticket Disposition

Tracking will be performed utilizing the automated debris management system, i.e. electronic load ticket. For minor storms, paper load tickets may be utilized

Load tickets will be completed and the supporting electronic data base will be provided to the City as the primary mechanism for tracking debris quantities deposited at debris management sites.

11. Temporary Debris Management Site Setup and Closeout Procedures

The Contractor will be responsible for preparing and closing out a temporary debris management site in accordance with the specifications in the Debris Removal and Disposal Contract and established DEQ Emergency Debris Waste pile permit.

12. Private Property Debris Disposal

Dangerous structures are the responsibility of the owner to demolish in order to protect the health and safety of adjacent residents. However, experience has shown that unsafe structures will often remain in place due to lack of insurance or absentee landlords. Care must be exercised to ensure that the City properly identifies structures listed for demolition.

The Department of Neighborhood Preservation will initiate any building damage assessments/inspections to eliminate substandard housing, blight conditions or environmental stresses based on the Uniform Statewide Building Code. The Inspector will work with the owner to determine if the structure is in need to be restored or repaired, demolition, or secured so that it is no assessable to the general public. The inspector will ensure the owner is given adequate time to complete all repairs. The owners will be referred to the Department of Planning to obtain any necessary building or demolition permits.

The Department of Planning and Community Development will provide necessary permits to restore/repair or demolition a building or structure. They will also coordinate with the State and FEMA Public Assistance officers regarding the demolition of private structures. The Code Official will coordinate with the Debris Manager to ensure debris from private property is removed in a timely fashion.

The Department of Public Works will execute the right-of-entry/hold harmless agreements with landowners to remove debris on private property or make necessary City system repairs on private property.

The Fire Department will ensure that contractors are qualified or licensed to remove hazardous materials such as asbestos and lead-based paint prior to demolition. Fire inspectors will conduct routine inspections to ensure all environmental and fire codes and regulations are followed regarding removal and disposal of environmental hazards.

13. Recycling Storm Debris

The intent is to recycle as much of the storm generated debris as feasible.

Vegetative Debris – Leaves and lawn litter is to be placed in transparent plastic bags during collection, placed at the curb or shoulder of road. Also, vegetative, or woody debris suitable for chipping or grinding will be stacked along the curb for collection and volume reduction. All vegetative debris will go to a collection site for volume reduction. After reduction, the materials can be transported to agricultural fields for use as a soil amendment in accordance with DEQ policies for use of such materials and/or to cogeneration power plants for use as boiler fuel.

Construction & Demolition Debris – These materials commonly referred to as C/D (construction demolition debris) will be directed to DEQ permitted C/D recycling facilities, if financially feasible and if volumes do not exceed the handling capacity of the Debris management System of TDSR sites.

Non-Vegetative, Non Hazardous Debris - Collection occurs every other week on the same day as regularly scheduled City refuse collection. The following materials are accepted and should be placed in the 90-gallon recycle container available:

- **Metals:** aluminum cans, pie plates, foil, and steel food cans
- **Glass:** clear, brown, and green glass bottles and jars
- **Plastics:** #1 & #2 bottles and jugs
- **Paper:** newspaper, telephone books, advertising inserts, unwanted mail, magazines, catalogs, mixed office paper, and flattened corrugated cardboard boxes

If curbside service is not available or quantity is too great, residents may bring recyclable materials to a nearby drop-off facility. The City of Norfolk hosts two locations:

1. **Maury High School** – corner of Colonial Avenue & 17th Street
2. **Security Lane** - off N. Military Highway, next to Norfolk Technical Vocational School

All locations are accessible 7 days a week, 24 hours per day. All sites accept the following materials:

- **aluminum cans**
- **clear, green, and brown glass bottles and jars**
- **corrugated cardboard**
- **mixed office paper**
- **newspaper, telephone books**
- **plastic soda and water bottles**
- **plastic milk, water and detergent jugs.**

The debris contractor established through SPSA will consider and pursue recycling alternatives when practicable, however the overall cost to the City shall not be increased as a result of the recycling program. The contractor should recycle C&D debris through material salvage and recycle clean, woody debris by mulching and composting when applicable.

14. Permitting

All environmental and land-use variances permits necessary to establish temporary debris management sites shall be obtained. Debris operations will comply with all Federal, State, and local regulations. Several agencies may be involved in issuing permits.

The following is a list of potential permits that may be required in debris operations:

- Waste processing and recycling operations permit
- Traffic or entrance permits
- Air quality permits
- Water quality permits
- HHW permits
- Freon removal from white goods
- Chesapeake Bay Preservation Area Tree removal permits
- Emergency Debris Waste pile Permit
- Right-of-way encroachment Permit
- Wetland/Dune Permit

For further details pertaining to obtaining permits, see the Permit Reference list enclosed in the Public Works Disaster Manual Volume II-6, attachment K.

15. Environmental Requirements

Following a disaster event, compliance with environmental protection laws and regulations is required. Federal and State Environmental Protection Agencies including but not limited to State Department of Environmental Quality and local Health Departments should be consulted for applicable regulatory requirements.

All debris related activities shall be coordinate with Federal, State, and local agencies, including but not limited to ERPOS and the Historic Preservation Office to ensure compliance with

environmental and historic preservation laws/regulations/policies and determining environmental monitoring and reporting requirements for TDSR's,

The agency shall also maintain records for historical purposes.

16. Health and Safety

All debris related activities shall be done in compliance with the safety requirements in the City of Norfolk Safety Manual found in the City Human Resource office, Version 2002 Section 110.05 of the Construction Safety & Health Standards Amendment to the Road & Bridge Specifications, and VOSHA rules & regulations.

The SPSA contract details safety and health standards that contractor personnel shall comply with unless otherwise determined unsafe or inappropriate in accordance with VOSHA regulations.

The City Health and Safety plan enables the agency and their contractors to avoid accidents during debris recovery operations and to protect workers from exposure to hazardous materials. The health and safety strategy establishes minimum safety standards for the agency and contractor personnel to follow.

The agency will require the contractor to follow all VOSHA rules and regulations. The agency will monitor compliance with the minimum safety standards to all emergency workers. The City also requires specific corrective actions to be taken if workers do not comply with the minimum safety standards.

Debris operations involve the use of heavy equipment to move and process various types of debris. Many of these actions can pose safety hazards to emergency response and recovery personnel and the public. In addition to those safety hazards, exposure to certain types of debris, such as building materials that contain asbestos and mixed debris that contains hazardous materials, can pose potential health risks to emergency workers.

V. *Weapons of Mass Destruction/Terrorism Event*

The handling and disposal of debris generated from a Weapons of Mass Destruction (WMD) or terrorism event will exceed the capabilities of the City and will require immediate Federal assistance.

Normally, a WMD or terrorism event will, by its very nature, require all available assets and involve many more Federal and adjacent State and County departments and agencies. The nature of the waste stream as well as whether or not the debris is contaminated will dictate the necessary cleanup and disposal actions. Debris handling considerations that are unique to this type of event include:

- Much of the affected area will likely be a crime scene. Therefore, debris may be directed to a controlled debris management site by State and/or Federal law enforcement officials for further analysis.
- The debris may be contaminated by chemical, biological, or radiological contaminants. If so, the debris will have to be stabilized, neutralized, containerized, etc. before disposal. In such an occurrence, the operations may be under the supervision and direction of a Federal agency and one

or more specialty Contractors retained by that agency. The presence of contamination will influence the need for pretreatment (decontamination), packaging and transportation.

- The type of contaminant will dictate the required capabilities of the personnel working with the debris. Certain contaminants may preclude deployment of resources that are not properly trained or equipped.

The Debris Manager will continue to be the single point of contact for all debris removal and disposal issues within the City. Coordination will be exercised through the USACE Branch located at the designated FEMA Disaster Field Office.

In this type of event, the City will become a supporting element to the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency (USEPA), and/or the Department of Energy (DOE).

VI. *Administration and Logistics*

All City departments and agencies will maintain records of personnel, equipment, load tickets, and material resources used to comply with this Plan. Such documentation will then be used to support reimbursement from any Federal assistance that may be requested or required.

All City departments and agencies supporting debris operations will ensure 24-hour staffing capability during implementation of this plan, if the emergency or disaster requires or as directed by the Debris Manager.

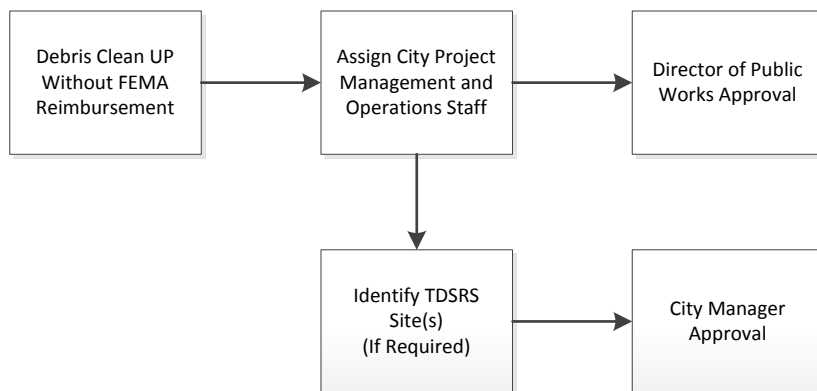
All City departments are responsible for the annual review of this Plan in conjunction with the annual update to the City EOP. It will be the responsibility of each tasked department and agency to update its respective portion of the Plan and ensure any limitations and shortfalls are identified and documented, and work-around procedures developed, if necessary.

The review will consider such items as:

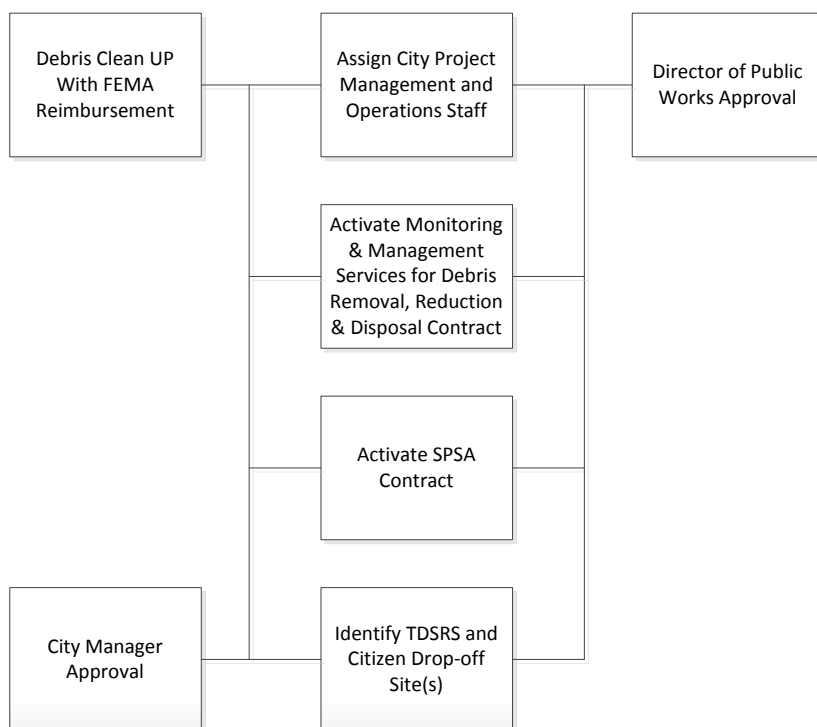
- Changes in Mission
- Changes in Concept of Operations
- Changes in Organization
- Changes in Responsibility
- Changes in desired contracts
- Changes in pre-Positioned contracts
- Changes in priorities

This Plan also may be updated as necessary to ensure a coordinated response as other Debris Management Plans are developed. Surrounding cities may also develop Debris Management Plans that should be coordinated with the City's Plan and other plans. This coordination is especially important with respect to allocation of resources such as temporary staging areas and disposal facilities.

Small Event with Low Likelihood of FEMA Reimbursement



Large Scale Clean Up with High Probability of FEMA Reimbursement



Pre-Event Check List

**Department of Public Works
Disaster Debris Collection Reduction and Management**

30-Days or More Prior to an Event:

- ☐ Verify all Contracts are in place:
 - SPSA Debris Removal, Reduction & Disposal Hurricane & Other Disasters, April 1, 2013 – March 31, 2017
 - SPSA Monitoring and Management Services or Debris Removal, Reduction and Disposal and other Disaster Response Preparedness Related Services
 - City of Norfolk Inspection Services for Disaster Response
 - City of Norfolk Emergency/Non-Emergency Environmental Response and Disposal Services – PetroChem Recovery Inc.
 - City of Norfolk Disposal Service - Holland Landfill
 - City of Norfolk Disposal Services - Clearfield
 - City of Norfolk HHW Disposal - EcoFlow
- ☐ Identify and confirm potential Temporary Debris Storage and Reduction Sites (TDSRS) and Citizen Drop Off Sites (CDS).
 - Site Selection Criteria for TDSRS:
 - >100 yards from Wetlands
 - >200 yards from Open Waters
 - >200 yards from Schools/ Residential Areas
 - Site Selection Criteria for CDS:
 - >100 yards from Wetlands
 - >200 yards from Open Waters
 - >50 yards from Schools
- ☐ Obtain Debris Collection, Hauling and Disposal Tickets booklet and distribute to truck drivers as necessary
- ☐ Print and maintain 25-copies of the overall City GIS maps indicating
 - Planning Districts.
 - Arterial and Interstates
 - Secondary Roads
 - Waterways
 - Airport Runways and Tarmacs
 - Railroad Tracks
- ☐ Certify equipment/trucks and outfit with electronic registering equipment to be used with the Automated Debris Management System.
- ☐ Maintain media advertising in the Virginian Pilot “Compass” ads and distribute as Trash Container Hangers.

7- Days or Less Prior to an Event:

- ☐ Notify DEQ-TRO office of intentions to utilize TDSRS and CDS sites. Documentation of date, time and individuals notified is recorded.
- ☐ Coordinate with Financial Management Bureau to match future FEMA work order submissions.
- ☐ Prepare TDSRS sites entrance and set up any preliminary erosion and sediment controls measures.
 - Install stone apron and access roads if necessary
 - Procure silt fencing if necessary
 - Mow grass if necessary
 - Procure separation barrier if necessary
- ☐ Identify Project Management Staff from various City agencies
 - Department of Public Works
 - Department of Utilities
 - Division of Parks and Urban Forestry
- ☐ Notify SPSA of Contract activation.
 - Select one or more of the pre-approved contractors
 - Phillips & Jordan, Inc.
 - Crowder Gulf Corporation
 - Ceres Environmental Services, Inc.
 - AshBritt, Inc.
 - Make initial contacts with contractor
 - Identify assets available for response
 - Pre-positioning of Equipment and Personnel
 - Identify time frame for response
 - Prioritize TDSRS setup
- ☐ Identify assets available for response
 - Pre-positioning of Equipment and Personnel
 - Identify time frame for response
 - Prioritize TDSRS setup
- ☐ Notify the Environmental Response Contractor – PetroChem Recovery System or EcoFlow
 - Identify availability for services of large scale clean-up and HHW pick-ups and disposal.
- ☐ Notify the Inspection Services contractor
 - Identify staffing availability
 - Develop Planning Guide for Initial response
- ☐ Issue Task Orders to all Contractors

1 to 30- Days after the Event:

- ☐ Transition from City force response to contractor response
- ☐ With SPSA Debris Contractor and Inspector Contractor:
 - Conduct a.m. and p.m. meetings
 - TDSRS set up schedule
 - Identify Assets required to complete clean-up
 - Identify Time for asset ramp up into area
 - Divide major subcontractors into discrete locations throughout City of Norfolk
 - Coordinate pick up days with publicity
 - Develop a Special Response Team to respond to direct requests from City
- ☐ Identify the need for additional TDSRS and CDS throughout City of Norfolk
- ☐ Coordinate with Waste Management Division
- ☐ Focus on Arterial Clean up (FHA)
- ☐ Identify systematic First Pass: start, progression and finish
- ☐ Identify Accounting Support for computerized Debris Ticket Data

Drop Off Sites

Potential Debris Storage and Reduction Sites

ADDRESS	NAME	ACREAGE
9610 NORFOLK AVENUE	Ocean View Golf Course	37.00
7300 NEWPORT AVENUE	Norfolk Wellness and Fitness Center	15.01
6282 NORTHAMPTON BOULEVARD	Lake Wright Golf Course	68.00
3500 GRANBY STREET	Norfolk Zoo	19.00
1330 N MILITARY HIGHWAY	Norfolk Technical-Vocation Center	63.64
1136 VISTA STREET	Barraud Park	5.00
150 PARK AVENUE	Harbor Park	17.00+
2400 BERKLEY AVENUE EX	Campostella Landfill	15.00
121 W LIBERTY STREET	Berkley Neighborhood Center	11.39
2000 CHURCH STREET	Church Street and 20th Street	2.83
8401 TIDEWATER DRIVE	Northside Park	18.00
1275 WILLOUGHBY BAY AVENUE	Willoughby Boat Ramp	2.07
2100 TARRALLTON DRIVE	Tarrallton Park	53.43
100 E OCEAN VIEW AVENUE	Ocean View City Beach	11.46

Potential Debris Storage and Reduction Sites

POTENTIAL CITIZEN DROPOFF SITES

Place	Address	Acreage
Barraud Park	1136 Vista Avenue	5+
Berkeley Neighborhood Center	121 W. Liberty Street	11.39
Campostella Landfill	2400 Berkley Avenue Ex	15+
Former Utility Site	2000 Church Street	2.8
Harbor Park	150 Park Avenue	17+
Lake Wright Golf Course	6282 Northampton Blvd	68
Norfolk Technical-Vocational Center	1330 N. Military Highway	63.64
Norfolk Wellness and Fitness Center	7300 Newport Avenue	15.01
Northside Park	8401 Tidewater Drive	18+
Ocean View City Beach	100 E Ocean View Avenue	6+
Ocean View Golf Course	9610 Norfolk Avenue	37+
Tarallton Park	2100 Tarrallton Drive	26
Virginia Zoo	3500 Granby Street	19+
Willoughby Boat Ramp	1275 Willoughby Bay Avenue	2.07
Total		291+

Public –Private Dropoff Sites of 3+ Acres

PARCEL	ACREAGE	OWNER	LEGAL DESCRIPTION	OWNERSHIP
0	3.35	ETHERIDGE, W D ET ALS	GRANT 3.7 ACRES	PRIVATE
1	3.25	WILLOUGHBY HARBOR MARINA INC	3.2592 AC ADDITIONAL LAND PSL 1	PRIVATE
2	4.16	CITY OF NORFOLK	PARCEL -TRIANGLE- DUP	CITY
3	4.69	CITY OF NORFOLK	PARCEL 69 PINEWELL BY THE BAY	CITY
4	5.77	CITY OF NORFOLK	1150.1FT M/L N OF SECOND TRACT	CITY
5	10.08	U S A	10 ACRES M/L 750FT	PRIVATE
6	4.03	ROOSEVELT SHORES, INC.	PARCEL 400FTX240X606.60FT	PRIVATE
7	4.19	ROOSEVELT SHORES, INC.	PARCEL -371.66FT. X 664.37FT.-	PRIVATE
8	9.16	EASTERN HOLDING CORPORATION	LOT B-3 EASTERN HOLDING CORP	PRIVATE
9	19.72	NORPACO BUILDERS, INC.	BONNEY FARM -PIECE-	PRIVATE
10	35.06	U S A	62.04AC M/L SHORELINE	PRIVATE
11	10.19	U S A	62.04AC M/L SHORELINE	PRIVATE
12	4.65	CITY OF NORFOLK	5.188 ACRES LITTLE CREEK	CITY
13	3.51	CLARK INVESTMENTS LLC	PAR. BET. 16TH BAY ST. & SHORE DR	PRIVATE
14	7.98	U S GOVERNMENT	72.414 AC -LITTLE CREEK-	PRIVATE
15	10.59	U S A	62.04AC M/L SHORELINE	PRIVATE
16	8.54	HARRISON MARINA LLC	PARCEL B-2, 8.5418 AC	PRIVATE
17	4.23	HARRISON MARINA LLC	PARCEL B-4, 4.232 AC	PRIVATE
18	4.21	U S A	62.04AC M/L SHORELINE	PRIVATE
19	41.66	U S A	TRIANGLE	PRIVATE
20	5.39	CITY OF NORFOLK	A,B & C	CITY
21	8.35	CITY OF NORFOLK	8.5548 AC OAKMONT NORTH	CITY
22	5.61	INDUSTRIAL DEVELOPMENT AUTHORITY	PT PARCEL 5.989 AC	PRIVATE
23	9.66	NORFOLK COLLEGIATE SCHOOL	PARCEL N 9.689 AC	PRIVATE

24	3.30	CITY OF NORFOLK	PARCEL 18 PLANTING STRIP	CITY
25	3.08	NFLK YACHT & COUNTRY CLUB	2.731 AC	PRIVATE
26	4.72	OLD, JEAN C TRUSTEE	B JEAN C OLD PROP	PRIVATE
27	5.31	CITY OF NORFOLK	PARCEL 37A	CITY
28	6.55	CITY OF NORFOLK	PARCEL 37-B	CITY
29	10.31	TABERNACLE CHURCH OF NORFOLK TRS	SITE A 10.2 ACRES M/L 350FT	PRIVATE
30	3.87	NBI INC	PARCEL A-1-A, 3.77 AC	PRIVATE
31	3.81	NORFOLK AIRPORT AUTHORITY	PT B BAYSIDE	PRIVATE
32	4.01	WELLINGTON OAKS COMMUNITY ASSOC	PARCEL A	PRIVATE
33	3.82	PARK CRESCENT ASSOC LTD PTNSHP	PARCEL C-1 3.800 AC	PRIVATE
34	7.83	PARK CRESCENT ASSOC LTD PTNSHP	PARCEL C-3 7.708 AC	PRIVATE
35	3.31	CITY OF NORFOLK	STRIP 25' X 1875' (BROMLEY)	CITY
36	10.92	CITY OF NORFOLK	LAKE 480 AC	CITY
37	3.06	TANNERS CREEK COMPANY LC	MARSH LAND	PRIVATE
38	6.29	CITY OF NORFOLK	STRIP 25' X 8663' (AZALEA ACRES)	CITY
39	3.54	OSBORNE, OLGA W EST	PT 3 OLGA W OSBORNE PROP	PRIVATE
40	9.24	COLLEGE OF WILLIAM & MARY	1-33, 35-69 & PT 34 BLK 190	PRIVATE
41	11.56	HALL, NANCY B TRUSTEE	TALBOT NECK PT BELL FARM (LOW)	PRIVATE
42	3.73	VIRGINIA NATIONAL BANK TRS	3.5 ACRES LITTLE CREEK	PRIVATE
43	6.14	HERTZ CORPORATION, THE	21 LITTLE CREEK RD (6 ACRES)	PRIVATE
44	4.27	CITY OF NORFOLK	SITE 18 6.51 ACRES	CITY
45	3.06	SARJUN, INC.	PARCEL	PRIVATE
46	59.27	CITY OF NORFOLK	PARCEL A, 55.768 AC	CITY
47	5.40	CITY OF NORFOLK	5.29 ACRES	CITY
48	18.46	CITY OF NORFOLK	PARCEL D, 21.9 AC M/L	CITY
49	3.12	NCP ASSOCIATES IV	PARCEL A NFLK COMM PK PHASE 1	PRIVATE
50	7.30	CMA-CGM (AMERICA) INC	PARCEL MP4-D1-B, 7.1807 AC	PRIVATE
51	11.21	CITY OF NORFOLK	LAKE 49 AC	CITY
52	3.19	N R & H A	PARCEL 7-RP 3.0120 AC	CITY
53	23.73	CITY OF NORFOLK	PARCEL 25 AC M/L	CITY

54	19.03	UNITED SERVICES AUTOMOBILE ASSOC	PARCEL MP1-A 18.963 ACRES	PRIVATE
55	7.80	UNITED SERVICES AUTOMOBILE ASSOC	PARCEL MP1-B 7.271 ACRES	PRIVATE
56	5.51	CITY OF NORFOLK	5.310 AC. M/L	CITY
57	5.55	VIRGINIA HOLDING CORP	PARCEL 5.17 AC	PRIVATE
58	16.98	HOSPITAL AUTHORITY OF NORFOLK	PARCEL A-1, 16.99 AC	PRIVATE
59	11.45	CITY OF NORFOLK	PT PARCEL 7 BOTETOURT SEC 1	CITY
60	7.00	CITY OF NORFOLK	600 FT	CITY
61	34.19	CITY OF NORFOLK	53.23 ACRES	CITY
62	7.61	GERLOFF ASSOCIATES LTD	PARCEL D NORFOLK IND PK	PRIVATE
63	8.01	CITY OF NORFOLK	PT FREEMASON ST E CLOSED	CITY
64	9.82	WAL-MART REAL ESTATE BUSINESS TR	PARCEL 1-B, 8.027 AC	PRIVATE
65	6.01	MARINE HYDRAULICS INTERN'T INC	FREE TRADE ZONE 5.967 AC	PRIVATE
66	9.34	VIRGINIA NATIONAL BANK EXEC TRS	PT PARCEL A	PRIVATE
67	6.28	MAROULIS, WILLIAM D & MARJORIE A	PARCEL 6 CROWN POINT SEC 2	PRIVATE
68	4.58	N R & H A	PARCEL 224, 4.3406 AC	CITY
69	15.20	CITY OF NORFOLK	26.969 AC	CITY
70	3.60	GLOBE IRON CONSTRUCTION CO	PARCEL B 3.594 AC	PRIVATE
71	3.93	CITY OF NORFOLK	PTS ADJACENT PARCELS	CITY
72	3.85	GLOBE IRON CONST CO, INC	3.449 AC	PRIVATE
73	3.99	COLONIAL WAREHOUSE ASSOCIATES LC	PARCEL D-1 4.061 AC	PRIVATE
74	3.23	N R & H A	PARCEL 1 2.921AC	CITY
75	6.31	CITY OF NORFOLK	6.3322 AC	CITY
76	5.70	CITY OF NORFOLK	5.46 ACRES	CITY
77	3.20	CITY OF NORFOLK	PT CHARLOTTE ST CLSD ORD 33391	CITY
78	3.25	CITY OF NORFOLK	PARCEL B 3.214 AC	CITY
79	6.58	POPLAR HALLS CIVIC LEAGUE INC.	MEADOW LAKE - POPLAR HALLS SEC. 4	PRIVATE

City of Norfolk Debris Management Plan

80	3.73	U S A	PARCEL 28 -3.643 AC-	PRIVATE
81	7.54	ST MARYS HOME DISABLED CHILDREN	PARCEL C-1, 8.185 AC	PRIVATE
82	4.12	N R & H A	STORM WATER MGMT POND, 3.77AC	CITY
83	8.29	POPLAR HALLS CIVIC LEAGUE INC.	SILVER LAKE - POPLAR HALLS SEC 2	PRIVATE
84	4.45	VISITORS OF N S U	4.4196 AC	PRIVATE
85	3.67	N R & H A	PAR N-D-B, 3.6744 AC	CITY
86	9.56	N R & H A	PARCEL TWO 9.2016 AC	CITY
87	3.03	N R & H A	PARCEL 413 MTA SEC 1	CITY
88	3.98	N R & H A	3.48 AC M/L	CITY
89	6.02	VISITORS OF N S U	PARCEL 408 5.818 ACRES	PRIVATE
90	5.87	CALVARY PRESBYTERIAN CH TRS	PARCEL A-1	PRIVATE
91	3.70	CITY OF NORFOLK	3.745 AC M/L ELIZABETH PARK	CITY
92	4.28	CITY OF NORFOLK	PT 9 WILD ACRES	CITY
93	5.41	OLIVER, RUTH H.	2.27 AC. BROAD CREEK	PRIVATE
94	5.45	CITY OF NORFOLK	PARCEL 3, 6.168 AC	CITY
95	3.01	CITY OF NORFOLK	PARCEL 2.86 AC	CITY
96	3.21	TITAN VIRGINIA READY-MIX LLC	360FT	PRIVATE
97	27.08	BROCK FARMS REALTY INC	6 AC M/L BROCK PROP	PRIVATE
98	5.06	BRANSCOME INC	5.4 ACRES M/L	PRIVATE
99	4.19	FHC PROPERTY HOLDINGS INC	PARCEL 2 3.9894 AC	PRIVATE
100	7.01	ELIZABETH RIVER TUNNEL DIST	6.65AC HIGH & 2.58AC LOW	PRIVATE
101	6.33	HALE PROPERTIES LLC	7.3 ACRES	PRIVATE
102	12.56	COLONNA'S SHIPYARD INC	20.51 AC.M/L	PRIVATE
103	7.06	MARINE HYDRAULICS INTERNTL INC	PARCEL B 6.611 AC	PRIVATE
104	5.90	VIRGINIA EYE DEVELOPMENT LLC	PARCEL 4 5.7827 AC	PRIVATE
105	3.79	BERKLEY MACH WORKS & FDRY CO INC	246.78 FT	PRIVATE
106	13.63	CITY OF NORFOLK	9.39 ACRES M/L	CITY
107	6.87	N R & H A	PARCEL 1600	CITY
108	13.26	CITY OF NORFOLK	12 ACRES	CITY
109	3.66	CITY OF NORFOLK	PT CHARLOTTE ST CLSD ORD 33391	CITY

110	6.63	COMMONWEALTH OF VIRGINIA	6.87 AC M/L	PRIVATE
111	3.34	CITY OF NORFOLK	3.69 ACRES	CITY
112	25.51	CITY OF NORFOLK	EAST PART OF PARCEL 4949-B, 26.5 AC M/L	CITY
113	3.87	N R & H A	PARCEL E-1 DIGGS TOWN	CITY
114	33.50	CITY OF NORFOLK	WEST PART OF PARCEL 4942-B, 31.8 AC M/L	CITY
115	6.48	INGRAM, ROBERT L SR & MELIA P	6.7 ACRES	PRIVATE
116	5.08	NFLK SHPBLDG & DRYDOCK CORP- LESSEE	PARCEL 2-1	PRIVATE
117	4.70	N R & H A	PARCEL A-1 DIGGS TOWN	CITY
	Total	990.27		

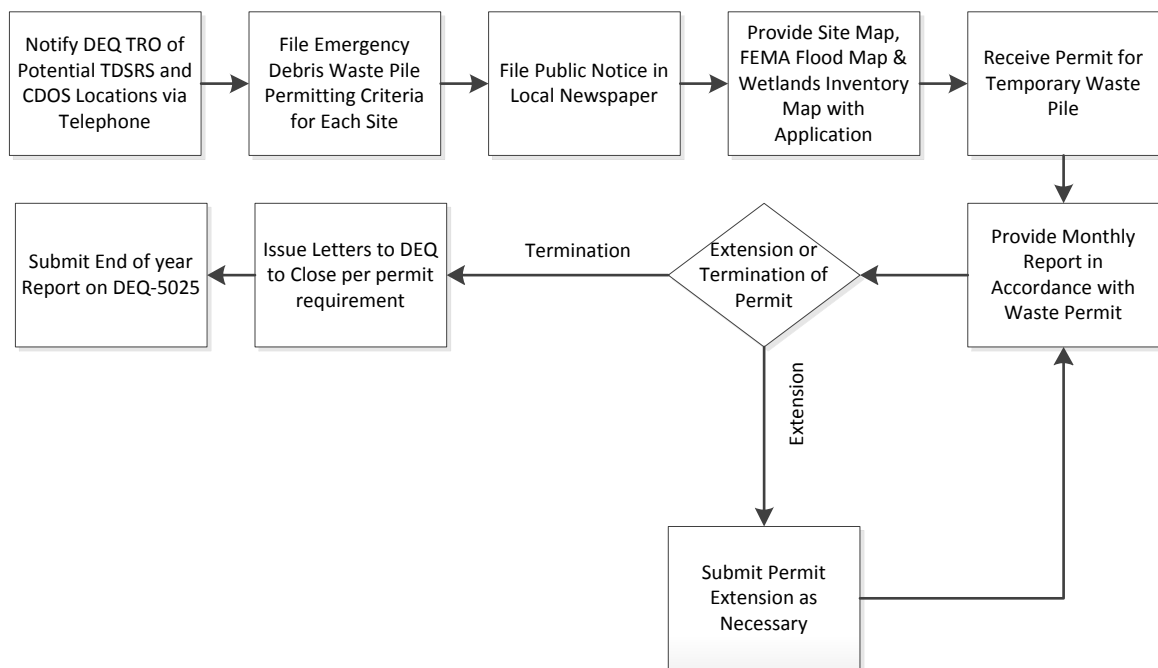
Attachment A: Paper Debris Load Ticket

NOTE: City will utilize Automated Debris Management System when applicable

Load Ticket		Ticket No. 0012345	
Municipality (Applicant)		Prime Contractor	
		Sub-Contractor	
Truck Information			
Truck No		Capacity	
Truck Driver (print legibly)			
Loading Information			
Loading	Time	Date	Inspector/Monitor
Location (Address or Cross Streets)			
When Using GPS Coordinates use Decimal Degrees (N xx.xxxxx)			
N		W	
Unloading Information			
Debris Classification		Estimated %, CYs, or Actual Weight	
<input type="checkbox"/> Vegetation <input type="checkbox"/> C&D <input type="checkbox"/> White Goods <input type="checkbox"/> HHW <input type="checkbox"/> Other* See Below			
Unloading	Time	Date	Inspector/Monitor
DMS Name and Location			
*Other Debris Explanation		Original: Applicant Copy 1: _____ Copy 2: _____ Copy 3: _____	

Attachment B: DEQ Permitting for TDSRS and CDOS

DEQ Permitting of TDSRS and Citizen Drop off Sites
Attachment B



Solid Waste Emergency Permit

Who Must Apply

Any owner or operator who proposes to treat, store or dispose of solid waste at a non-permitted facility whose permit does not cover such solid waste or solid waste management activities as a result of an emergency situation in which there is an imminent and substantial threat to human health or the environment.

Authority

Virginia Code § 10.1-1408.1

Virginia Administrative Code 9 VAC 20-80-480 through 9 VAC 20-80-620

Term

Up to 90 days

Fees

No fee

Typical Requirements of a Permit

The permit must specify the solid wastes to be received and the manner and location of their storage, treatment or disposal as well as, to the extent possible and not inconsistent with the emergency situation, all applicable requirements of the regulations (9 VAC 20-80-10 et seq.).

Application Process

1. Contact DEQ Regional Office - Waste Program Manager.
2. The permit may be oral or written. If an oral permit is issued, it must be followed within 5 days by a written permit.
3. Additional information may be requested to process the written permit. This would include the name and location of the facility, contact person, a description of the wastes involved, the reason for the emergency situation, the type of storage, treatment or disposal that is to occur and procedures involved, and the local officials to be contacted, if applicable.
4. Public notice occurs after permit issuance.

EMERGENCY DEBRIS WASTEPILE PERMITTING CRITERIA

This is an application for an emergency permit to dispose of waste generated as the result of natural or man-made disasters. The emergency permit request may be oral or written. If oral, it shall be followed within five days by a written emergency permit application. Oral responses can only be given if the applicant is fully aware of the siting requirements outlined in this application, otherwise a written request must be provided using this application. Mail or fax the written request to the Department.

*Emergency Permits are valid for 90 days from the time they are issued.
All associated waste activities must be inclusive in the 90-day period.*

INSTRUCTIONS:

Read all sections carefully. Fill in all of the information on DEQ Form EDWP-01 and all applicable information on DEQ Form EDWP-02. Public notice information required by the applicant is found on EDWP-03 and a certification signature is required on EDWP-04. Note that a site map, flood map, US Fish and Wildlife Service National Wetlands Inventory Map and a list of wastes to be received, and the manner and location of their treatment, storage and disposal must accompany this application. The site may either be selected prior to the emergency or immediately after the emergency. The Department encourages pre-selection. Follow the applicable guidelines below.

Pre-Selected Sites:

If the site is pre-selected, public participation must be held in accordance with the Virginia Solid Waste Management Regulations (VSWMR) regulations **9 VAC 20-80-485.A.5** and **9 VAC 20-80-485.B.4**. The Department will not consider approval of a pre-selected site without public participation. Pre-selected sites, if approved, will be granted an emergency permit upon request at the time of the emergency. The applicant needs only to contact the Department, either orally or in writing, and provide a notice that a pre-selected site will be used for the present emergency. The notice shall include, as a minimum, the applicants name and contact information, the nature of the emergency, and the location of the site and owners name. Oral requests shall be followed with a written request within five days. DEQ Form EDWP-01 and DEQ Form EDWP-02 must be on file with the Department prior to the emergency for all pre-selected sites. The public notice form is found on form EDWP-03.

Post Emergency Sites

In the case of selecting a site immediately after an emergency, the Department may grant a temporary emergency permit through oral or written requests. The applicant may verbally relate the information requested on DEQ Form EDWP-01 and DEQ Form EDWP-02 but must provide written copies within five days or as soon as the infrastructure support will allow. In addition, a public notice as per **9 VAC 20-80-485.B.4** shall be published, by the applicant, within five days of the request, or as soon as practicable, in order for the emergency permit to become effective. A copy of the advertisement shall be faxed to the Department once it is published. Disposal of waste may commence upon verbal approval but all waste activities must cease after 90 days.

EMERGENCY DEBRIS WASTEPILE PERMIT INFORMATION

DEQ Contact Information

Department of Environmental Quality	Phone: (XXX) XXX-XXXX
<i>Regional Office Address</i>	FAX: (804) 698-4383
<i>Regional Office Address, ZIP</i>	Please call prior to faxing to inform staff
Attention: Solid Waste Permitting	

If information is not known, use NA. Please type or print information.

SIGNATURE REQUIRED UNDER CERTIFICATION ON FORM DEQ EDWP-04 WHEN COMPLETED.

Expected or current emergency	
Authority or Agency	
Primary Contact's Name	
Address	
City, State, Zip	
Phone Number / Fax Number	
Secondary Contact's Name	
Address	
City, State, Zip	
Phone Number / Fax Number	
Site Location (latitude/longitude or directions from major roads)	
Site Name	
City, State, Zip	
Owner of Site	
Owner's Address	
City, State, Zip	
Phone Number / Fax Number	
Approximate size (acres)	
<u>List expected types of waste</u> See Attachment D for typical waste types. Additional sheets may be used	
<u>Typical treatment, storage and disposal options</u> Additional sheets may be used	

City of Norfolk Debris Management Plan

EMERGENCY DEBRIS WASTEPILE SITING CRITERIA

Put a • or • in the Yes / No Columns as necessary. Additional information is provided as attachments A-F. Please read each criterion carefully. **Sign the certification on DEQ FORM EDWP-04.**

	Siting Criteria	Yes	No
1	Site Location Map Attached		
2	Not prone to base floods [100 year flood plain, coastal flooding] or inundation. <i>Copy of FEMA Map or Equivalent is attached</i>		
3	Site is geologically stable. (see Attachment A)		
4	Site has adequate berm area and terrain to manage leachate release.		
5	Not closer than:	<input type="checkbox"/>	<input type="checkbox"/>
	100 feet from any regularly flowing surface water body or river.		
	200 feet from any well, spring, or other groundwater source of drinking water		
6	WETLANDS SHALL NOT BE IMPACTED. (see Attachment B) <i>US Fish and Wildlife Service National Wetlands Inventory Map is attached.</i>	<input type="checkbox"/>	<input type="checkbox"/>
7	Site characteristics	<input type="checkbox"/>	<input type="checkbox"/>
	Slopes less than 33%		
	No springs seeps or other groundwater intrusions		
	No gas, water, sewage, or electrical or other transmission lines under the site		
	No existing open dump, unpermitted landfill, lagoon, or similar facility on site.		
	Specific site conditions which may be considered for exemption (applies only to site characteristics) SPECIFY:	<input type="checkbox"/>	<input type="checkbox"/>
8	No strip mines, exposed bedrock or quarries present. (See Attachment C) If No, does the site have a liner as per Attachment C?		
9	Fifty-foot firebreak around disposal areas and from all treelines		
10	Does not impact cemeteries (public, private, pet) or culturally sensitive areas.		
11	Has ample access for delivery vehicles.		
12	Is anticipated waste acceptable for disposal? (See Attachment D) (90 day permit, all activities inclusive)		
13	Can the waste be segregated for disposal? (See Attachment D)		
14	Public notice form with required information attached. (See Attachment F. Form should be faxed with other required forms. May be verbal over phone, if necessary.)		
15	For pre-selected sites, was a public meeting held? (If not pre-selected site, go to 15)		
	Public Meeting Location: _____ Date: ____/____/____ (mm/dd/yyyy)	<input type="checkbox"/>	<input type="checkbox"/>
16	Can the site be closed in accordance with Department standards? (See Attachment E)		

Revised 9/03

DEQ FORM EDWP-02

Public Notice for Emergency Permits

Type of media (e.g. newspaper or radio)	
Name of media (e.g. newspaper)	
Contact Name	
Phone Number	
Fax Number	
Publication cycle	

NEWSPAPER ADVERTISEMENT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF WASTE PERMITTING
PUBLIC NOTICE FOR A
TEMPORARY EMERGENCY PERMIT
TO TREAT AND STORE SOLID WASTE
DUE TO _____,
(emergency)
FOR _____, VA
(city, town, county)

Due to the recent emergency from _____, and pursuant to the requirements of 9 VAC 20-80-485 .B.4 of the Virginia Solid Waste Management Regulations (VSWMR), Permitting of Solid Waste Management Facilities, The Virginia Department of Environmental Quality (*Regional Office Address & ZIP*), hereby authorizes _____ to operate a temporary emergency debris site located at _____.

The site will receive the following solid wastes: _____.

Typical treatment, storage, and disposal options will include: _____.

_____. The site meets the minimum siting requirements deemed necessary for environmental protection and public safety. Groundwater monitoring is not required but leachate management and run-off control are required. The permit will expire 90 days from the date of verbal or written authorization given on _____. Closure shall include the removal of wastes, waste constituents, and all temporary features used in support of the waste activities associated with deposit, environmental protection, maintenance, and operation. Final closure should return the site to as near as natural condition as possible prior to the disposal of waste. If there are any questions or concerns regarding the issuance of the temporary emergency permit, please contact the Department at (XXX) XXX-XXXX or at the above address.

ALL APPLICATIONS MUST BE SIGNED.

CERTIFICATION:

I hereby affirm that the information provided on this application is accurate and complete to the best of my knowledge. I fully understand the requirements of the siting criteria and that an emergency permit is valid for 90 days from the time of issuance. All activities must be inclusive in the 90-day period. Failure to provide accurate and complete information or follow the requirements and conditions of this application may result in permit denial or revocation. I have enclosed a copy of the advertisement that was published in the local newspaper.

Signed _____

Date _____
(Type or Print dd/mm/yyyy)

Title or Authority by _____
(Type or Print)

The following items must be returned to the Department:

- _____ Contact Information (EDWP-01)
- _____ Siting Checklist (EDWP-02)
- _____ Copy of Advertised Public Notice
- _____ Certification (EDWP-04)

ATTACHMENT A: GEOLOGY

Emergency debris (ED) wastepiles shall not be sited in geologically unstable areas where inadequate foundation support for the structural components of the wastepile exists. Factors to be considered when determining unstable areas shall include:

- a. Soil conditions that may result in differential settling and subsequent failure of containment berms;

EXAMPLES

highly compressible clays,	liquefiable soil	expansive soils	peat
collapsible soils	frost-susceptible soil	soils susceptible to hydrocompaction	
other conditions not explicitly listed			

- b. Geologic or geomorphologic features that may result in sudden or non-sudden events and subsequent failure of containment berms;

EXAMPLES

Landslide prone areas	Abandoned river channels	highly erosion-prone areas	over sole source aquifer
other conditions not explicitly listed		highly karstic areas	groundwater seeps
structural discontinuities such as extreme folding, faulting, fracturing and jointing			

- c. Man-made features or events (both surface and subsurface) that may result in sudden or non-sudden events and subsequent failure of containment berms;

EXAMPLES

Emergency routes	unpermitted landfills	sludge lagoons	unsuitable fill
adjacent to highly explosive products such as chemical, petroleum or fertilizer storage bins			
downstream of weakened or damaged dams or other water retention structures			
over underground excavations such as storage tanks, sewer and traffic tunnels, mine shafts			
other conditions not explicitly listed			

- d. Presence of sink holes within the disposal area.

ATTACHMENT B: WETLANDS

Wetlands shall be avoided at all times. Existing wetland delineation maps prepared the US Fish and Wildlife Service shall be used to determine prohibited areas. *Attach an applicable Wetlands Inventory Map with this application.* Wetlands that are encountered on the site yet are not covered by the map shall not be used unless the U.S. Army Corps of Engineers provides an approval letter and it is attached to this application.

ATTACHMENT C: STRIP MINES, EXPOSED BEDROCK AND QUARRIES

In strip mine pits, all coal seams and coal outcrops shall be isolated from solid waste materials by a minimum of five feet of natural or compacted soils with a hydraulic conductivity less 1×10^{-7} cm/sec. Exposed bedrock and quarry faces shall also be lined with five feet of natural or compacted soil with a hydraulic conductivity $\bullet 1 \times 10^{-7}$ cm/sec.

ATTACHMENT D: WASTE**Acceptable Waste**

Demolition waste, construction waste, debris waste, land clearing debris, discarded tires, and white goods, free of chloroflourocarbons and PCBs. No other wastes are authorized for the ED wastepile. Liquid waste, sludge waste, radioactive waste, friable asbestos, medical waste and other similar waste shall be prohibited.

Hazardous waste shall be prohibited from the emergency wastepile except when a separate, distinct area can be lined with concrete, collection berms and ditches are erected, and containment booms, in conjunction with other containment strategies, are used.

Segregation

1. The limits of the wastepile shall be large enough to allow segregation of waste with 50-foot firebreak between each segregated area and any adjacent wastepiles or treelines.
2. Each segregated area shall be large enough to accommodate expected volume of waste type.
3. The following wastes require separate disposal areas within the limits of the emergency wastepile.
 - A. Yard Waste and Woody Products such as trees, stumps, untreated wood and timber, paper products, and untreated wooden household furnishings.
 - B. Treated and Painted Wood Products
 - C. White Goods
 - D. Tires
 - E. Concrete, Asphalt and Building Material (friable asbestos is prohibited)
 - F. Hazardous Waste (if allowed)

ATTACHMENT E: CLOSURE

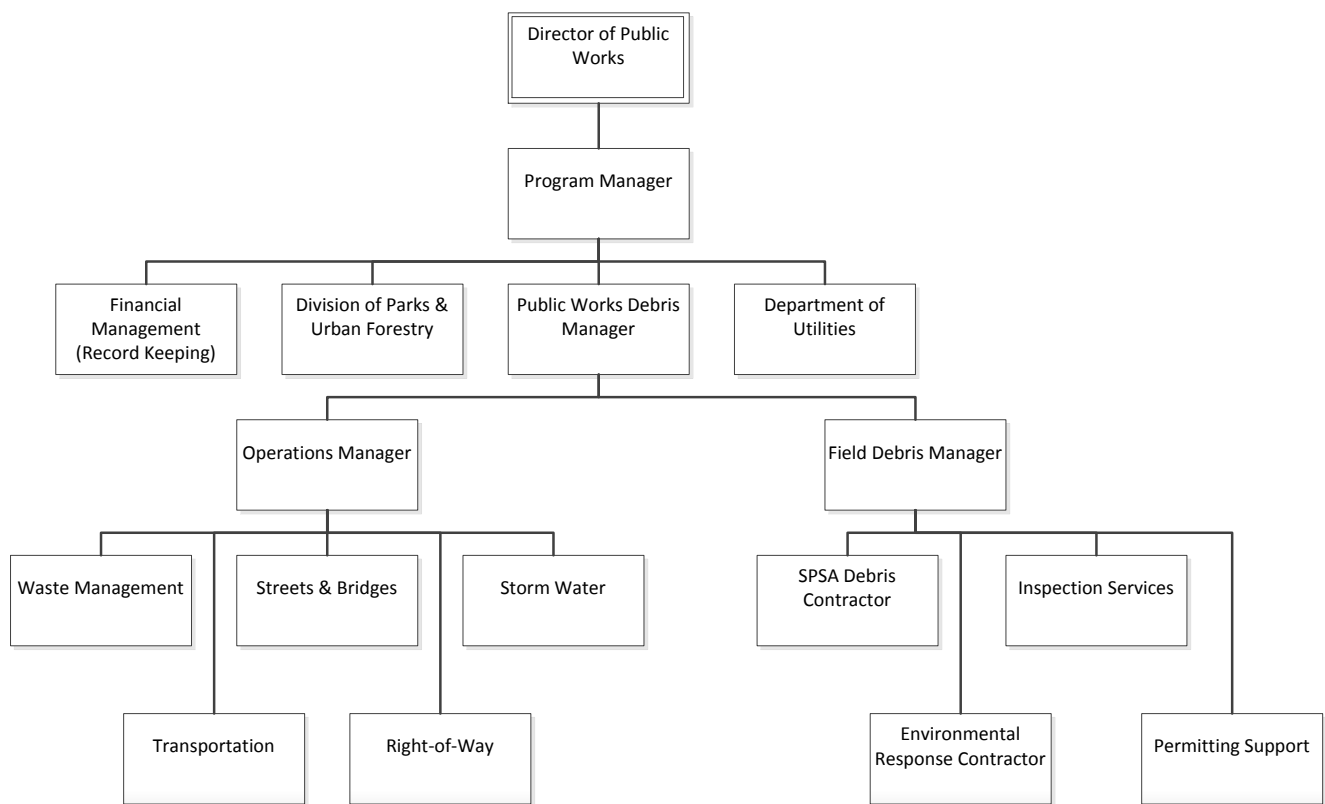
Closure shall include the removal of wastes, waste constituents and all temporary features used in support of the waste activities associated with deposit, environmental protection, maintenance and operation. Final closure should return the site to as near as natural condition as possible prior to the disposal of waste.

ATTACHMENT F: PUBLIC NOTICE

VSWMR 9 VAC 20-80-~~485~~.B.4 requires a public notice to be accompanied with the written permit. The **Applicant** will fill out DEQ FORM EDWP-03 and fax that to a newspaper in the largest circulation for that municipality. The generic form contains the required information. The form is self-explanatory and may be filled in by hand. PRINT, do not use cursive. It must be legible. A copy of the advertisement from the newspaper must be submitted to the Department within 24 hours after submitting the contact information and siting checklist. Once the Department receives the required permit application and a copy of the advertisement from the applicant the permit will be signed and issued. The actual publication date of the advertisement should be the soonest date possible depending on the soonest newspaper publication date.

Attachment C: Project Management Staff

Project Management Staff
Attachment C

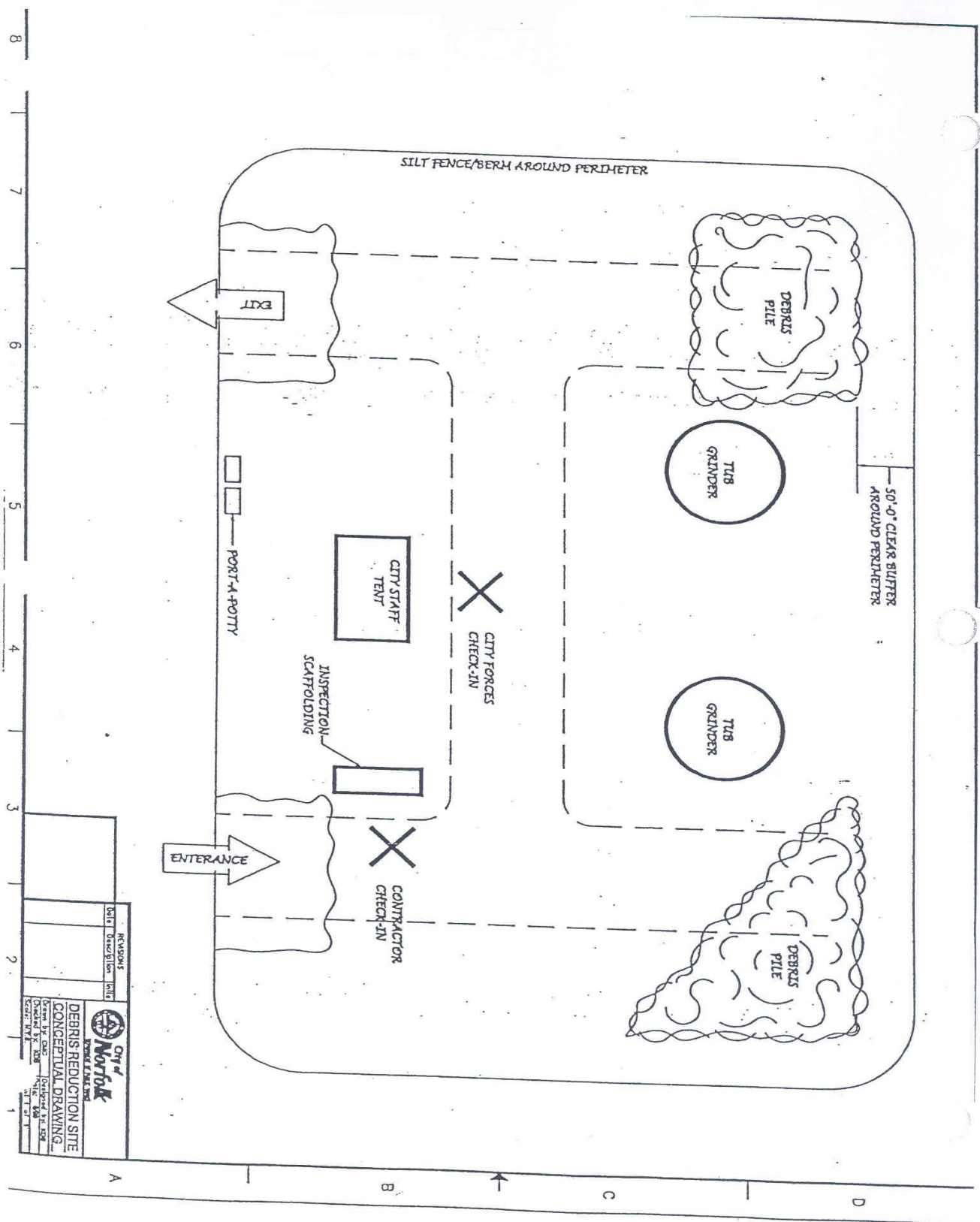


**Attachment D: General Procedures From Debris Pick-up
to Disposal at TDSRS**

GENERAL PROCEDURES FROM DEBRIS PICKUP TO DISPOSAL AT THE TDSRS

- ☐ Trucks shall load debris in the area designated by the assigned inspector
- ☐ Truck driver will be issued a ticket by the field inspector. The inspector will fill out the Trucking Company, Truck Number, Driver, Location of Debris, Type of Debris, Truck Capacity and Time and Date. The Field inspector should sign the ticket
- ☐ If the Debris originates from a major arterial, then the ticket should be marked FHA
- ☐ The Truck will proceed to the TDSRS site
- ☐ Upon entering the TDSRS site the truck will pass under the observation tower. The inspector on the ground will enter the time the truck is at the tower and the percentage full based upon observations of the inspector in the tower. Estimates will be based on the attached document.
- ☐ The TDSRS inspector will verify the information on the ticket initial the ticket and remove the top two copies, returning the bottom two copies to the driver.
- ☐ The TDSRS inspector will calculate the amount of waste carried by the truck by multiplying the percent full by the trucks certified capacity.
- ☐ The TDSRS inspector will verify the truck has discharged its load prior to the truck exiting the TDSRS.

Attachment F: Schematic Layout of TDSRS

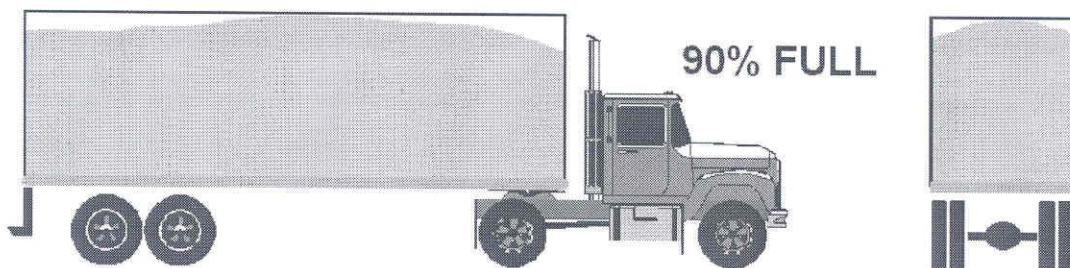
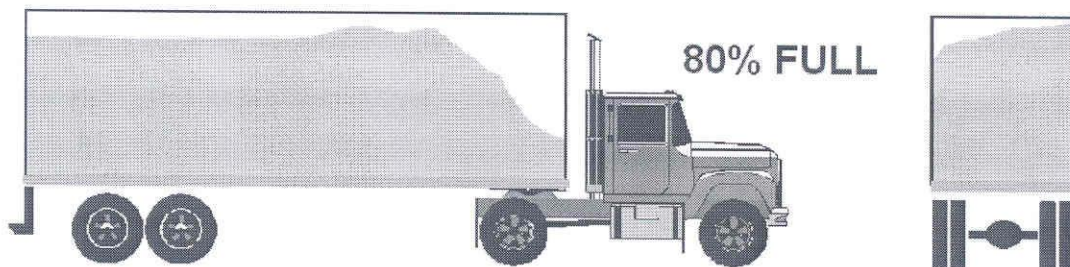
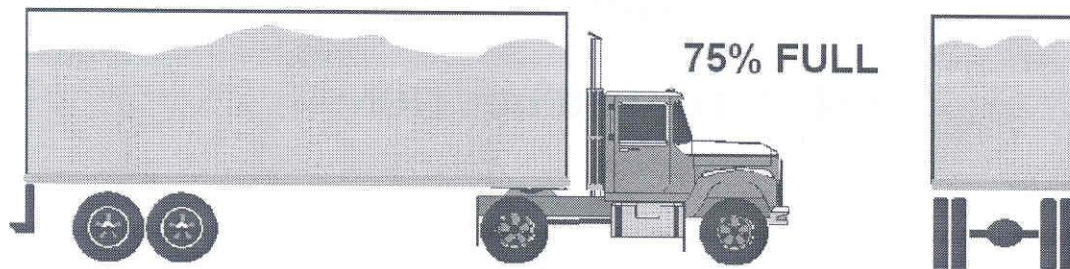
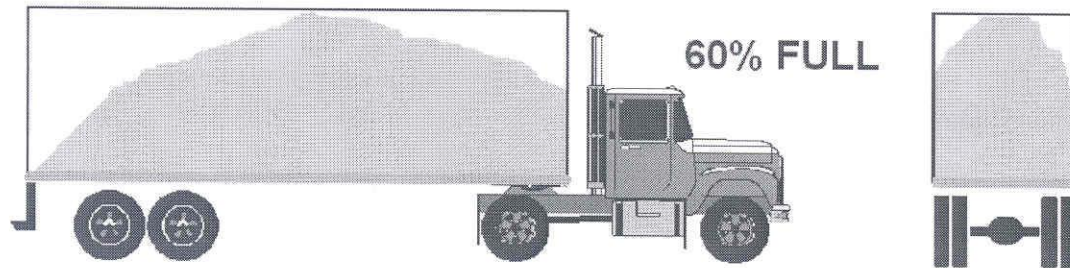


Attachment G: Local Monitor Guidelines for Estimating Quantities of Debris in Trucks

Monitoring Debris Trucks Guideline for Estimating Loads in Trucks

- Check the truck number.
- Check that the capacity (size) of the truck written on the ticket matches with the size marked on the side of the truck.
- Walk around the truck. Make sure the truck is loaded with disaster debris. Ensure that the truck is not falsely loaded.
- When the truck leaves, make sure that the truck is completely empty.
- If there is no tailgate on the truck, the truck is NOT full. The maximum estimate of the capacity of the load is 85% full. However, the monitor must use good judgment to determine if the load is really 85% full. It is more likely that the load is between 40% and 60% full.
- If the truck is half full, in the debris quantity section of the load ticket, note that the load is 50% full.
- If the truck is one quarter full, the load is 25% full.
- If the truck is three quarters full, the load is 75% full.
- There are other percentage various of how a truck can be filled (see Attachment)
- A truck is 100% full only when the debris is filled completely to the “brim” and the truck is heaped above the sideboards. The truck must have a tailgate that secures the entire back end of the truck.

NOTE: It is virtually impossible that a truck can be 100% loaded because woody debris, trees braches, and rubble cannot be placed in a truck with out having air holes.



Attachment H: Disaster Recovery Potential Team Leaders

Disaster Recovery Team Leaders

Waste Management

Strike Team 120
Strike Team 130
Strike Team 140
Strike Team 150

Operations

Pete Garner	Engineering Operations Manager
Dave Lucas	Operations Superintendent
Donell Davis	Storm Water Operations Manager
John Snowden	Assistant Streets Engineer
VACANT	Assistant Storm Water Superintendent
Glenn Longworth	Construction Inspector III

Field Engineering

John White	Storm Water Engineer
Reynaldo Hernandez	Civil Engineer III
Scott Smith	Civil Engineer III
Quy Tran	Civil Engineer II
Melinda Hunter	Civil Engineer II
Camille Coombes	Civil Engineer II
Zuzanna Lesniak	Civil Engineer II
Denis Ozowara	Civil Engineer II

Attachment I: Public Works Chainsaw Personnel

Appendix T Chainsaw Personal

Updated June 2013

Name	Formal Training	Experience	Division
Ameen, Terrence	X	9/9/2010	SB
Artis, Johnny	X	9/9/2010	SB
Ashby, Anton	X	4/10/2013	SB
Baraldi, Anthony	X	4/10/2013	SB
Broadnax, Jermel	X	YES	SB
Brockett, James	X	9/9/2010	SB
Carter, Dwight	X	4/10/2013	SB
Collier, Gerald	X	9/9/2010	SB
Cross, Thomas	X	9/9/2010	SB
Ebron, Terre	X	4/10/2013	SB
Franklin, Michael	X	9/9/2010	SB
Foultz, Cadd	X	4/10/2013	SB
Futrell, Maxie	X	9/9/2010	SB
Gilliam, Leonard	X	YES	SB
Gregory, Dalton	X	YES	SB
Grimstead, Jermaine	X	4/10/2013	SB
Harris, James	X	4/10/2013	SB
Hutton, David	X	9/9/2010	SB
Johnson, Anthony	X	4/10/2013	SB
Jones, Albert, Sr.	X	YES	SB
Kelley, Willie	X	9/9/2010	SB
Lewis, William	X	4/10/2013	SB
Livingston, Rodney	X	4/10/2013	SB
Littlejohn, Christopher	X	4/10/2013	SB
Liverman, Cary	X	4/10/2013	SB
Livingston, Rodney	X	4/10/2013	SB
May, Pierre	X	4/10/2013	SB
Mead, Kacy	X	9/9/2010	SB
Osibogun, Michael	X	4/10/2013	SB
Riddick, Jason	X	4/10/2013	SB
Roach, Sharron	X	9/9/2010	SB
Robinson, Pierce	X	YES	SB
Scott, Edward	X	YES	SB

Shannon, Cary	X	4/10/2013	SB
Smythe, Bryan	X	9/9/2010	SB
Stimphil, Jean	X	9/9/2010	SB
Trotter, Darrell	X	9/9/2010	SB
Velazquez, Edwin	X	4/10/2013	SB
White, Thurland	X	4/10/2013	SB
Wilkins, Donald	X	9/9/2010	SB
Wood, Patrick	X	4/10/2013	SB
Wooten, Donte	X	4/10/2013	SB
Bailey, Antonio	X	YES	SW
Boone, Shawn	X	YES	SW
Cole, Charles	X	YES	SW
Davis, Donell	X	YES	SW
Drew, Larry	X	4/10/2013	SW
Fentress, Roger	X	9/9/2010	SW
Fields, Horace	X	4/10/2013	SW
Forrest, Myron	X	9/9/2010	SW
Gray, William	X	4/10/2013	SW
Green, Timothy	X	YES	SW
Hoggard, Rickey	X	4/10/2013	SW
Hoskins, Lindon	X	YES	SW
Ingram, Ryan	X	9/9/2010	SW
Knox, Michael	X	9/9/2010	SW
Mack, James	X	9/9/2010	SW
Meier, Dennis	X	4/10/2013	SW
Serrano, Luis	X	YES	SW
Smith, Fred	X	4/10/2013	SW
Smith, Kevin	X	4/10/2013	SW
Snedecor, Raymond	X	YES	SW
Speller, Eric	X	9/9/2010	SW
Stewart, Roeger	X	YES	SW
Taylor, Chris	X	4/10/2013	SW
Turner, Gregory	X	9/9/2010	SW
Vaughan, Alton	X	YES	SW
Watford, Nathaniel	X	4/10/2013	SW
Wright, Tammy	X	YES	SW

Attachment J: HRPDC Emergency Planning Model

Regional Infrastructure and Debris Management

Emergency Planning Model

Appendix R-1

U. S. Army Corps of Engineers Debris Estimating Model

Overview

The Emergency Management Staff of the U.S. Army Corps of Engineers, Mobile District, developed the modeling procedure described below. They used actual data from Hurricanes Frederick, Hugo and Andrew. The estimates produced by the model are anticipated to be within an accuracy tolerance of $\pm 30\%$. There are many variables inherent to the debris removal process that can affect model accuracy. The model uses the total number of households, as the primary factor to estimate storm-generated debris for a developed urban or suburban area. Other factors used are cubic yards of debris generated per household per storm category, vegetative cover, commercial density and the amount of precipitation. It is assumed that household debris will include debris that would be generated from damage to the house (structure), it's contents and the surrounding shrubs/trees. Vegetative cover includes all trees, shrubbery and other debris along public right-of-ways. Commercial density includes debris generated by damage to businesses and industrial facilities. It is also assumed that the majority of commercial debris will be removed by private contractors. However, temporary debris storage and reduction space (TDSRS) space is still required. The amount of precipitation generated by a storm directly impacts the amount of debris that is generated, during the storm. Very wet storms will saturate the ground; thereby, causing more trees to fall.

For planning purposes, the worse case storm scenario (Category of Hurricane) needs to be used for the area being evaluated. Within Hampton Roads, the worse case scenario would be a Category 4 storm for hurricane at-risk jurisdictions.

The wind speeds will vary, during actual events and more accurate debris estimates can be produced by detailed analysis. The most accurate process is to determine the defined areas involves the use of Doppler Radar (National Weather Service Broadcasts) and GIS (Geographical Information Systems). The Doppler Radar will define the storm intensity and the exact track of the "EYE" of the storm, in relation to the affected area. By tracking the storm, plotting the storm path and 5 mile wide bands on each side of the eye, the areas and wind speed can be estimated. The wind speed of the eye wall normally determines the reported storm category, with the outer five mile bands being a lower



category. The storm then can be tracked inland, until the winds speeds dissipate below hurricane strength. The targeted area can be divided by storm category. Once divided, the coordinates can be entered into GIS to determine areas and demographic information, such as population, schools and businesses that are necessary for the model to calculate debris quantities.



Regional Infrastructure and Debris Management

Emergency Planning Model

Appendix R-2

USACE Estimating Debris Quantities

Determine population (**P**) in the affected area. For example, the 1990 census data for Harrison County, Mississippi, is 165,500. Therefore, for Harrison County, **P = 165,500**. Population density per square mile can also be used to determine debris estimates per square mile.

The assumption of three (3) persons per household (**H**) is used for this model.

Estimated population (**P**) for a given jurisdiction may be used to determine a value for **H**.

$$H = P / 3$$

The formula used in this model will generate debris quantity, as an absolute value based on a known or estimated population; or, as a debris quantity per square mile based upon population density per square mile.

The model formula is as follows:

$$Q = H (C) (V) (B) (S),$$

where:

Q is quantity of debris in cubic yards;

H is the number of households;

C is the storm category factor in cubic yards;

V is the vegetation characteristic multiplier;

B is the commercial/business/industrial use multiplier;

S is the storm precipitation characteristic multiplier; and

C is the storm category factor.



R-2-1



It expresses debris quantity in cubic yards (cy) per household by hurricane category and includes the house and its contents, and land foliage.

<u>Hurricane Category</u>	<u>Value of C Factor</u>
1	2 cy
2	8 cy
3	26 cy
4	50 cy
5	80 cy

V is the vegetation multiplier. The vegetation multiplier acts to increase the quantity of debris by adding vegetation, including shrubbery and trees, on public rights of way.

<u>Vegetative Cover</u>	<u>Value of V Multiplier</u>
Light	1.1
Medium	1.3
Heavy	1.5

B is the multiplier that takes into account areas not solely single-family residential. It includes small retail stores, schools, apartments, shopping centers and light industrial or manufacturing facilities. Built into this multiplier is the offsetting commercial insurance requirement for owner/operator salvage operations.

<u>Commercial Density</u>	<u>Value of Multiplier</u>
Light	1.0
Medium	1.2
Heavy	1.3

S is a precipitation multiplier that takes into account either a "wet" or "dry" storm event. During a "wet" storm, trees will up-root to generate a larger volume of debris (for category 3, or greater storms).



<u>Precipitation Characteristic</u>	<u>Value of Multiplier</u>
None to Light	1.0
Medium to heavy	1.3

Example: A Category 4 storm passes through Harrison County, Mississippi.

The area is composed of primarily single-family dwellings, with some apartment complexes, schools and shopping centers. Vegetation characteristic is heavy due to the proliferation of residential landscape shrubbery and trees throughout the area. It is a very wet storm, with rain before the arrival of the hurricane and rain continued for a few days, after the wind pass.

$$Q = H (C) (V) (B) (S)$$

$$H = P/3 = 165,500 / 3 = 55,167 \quad (3 \text{ persons/household})$$

$$C = 50 \quad (\text{factor for a Category 4 storm})$$

$$V = 1.5 \quad (\text{multiplier for heavy vegetation})$$

$$B = 1.3 \quad (\text{multiplier for heavy commercial due to schools, stores and apartments})$$

$$S = 1.3 \quad (\text{multiplier for wet storm event})$$

$$\text{then } Q = 55,167 (50) (1.5) (1.3) (1.3) = 6,992,374 \text{ cubic yards (CY) debris or } 7 \text{ Million Cubic Yards (CY)}$$



Regional Infrastructure and Debris Management

Emergency Planning Model

Appendix R-3

USACE Debris Reduction Site Requirements

Current USACE to determine Temporary Debris Storage and Reduction Sites (TDSRS) requirements is to estimate stack heights of 10 feet with 50% usage of land area to provide for roads, safety buffers, burn pits and HTW areas.

1 acre (ac) = 4,840 square yards

10 feet stack height = 3.33 yards

Total volume per acre = 4,849 square yards per acre (3.33 yards) = 16,133 cubic yards per acre

From the example above, the acreage required for debris reduction sites is 7,000,000 cubic yards or 16,133 cubic yards per acre = 434 acres required for debris storage only, no buffers, etc.

To provide for roads and buffers, the acreage must be increased by a factor of 2.0.

$434 \times 2.0 = 868$ acres (Use 860 acres) or,
since one square mile = 640 acres
860 acres or 640 acres per square mile = 1.34 square miles

If you assume a 100 acre reduction site can be cycled every 45 to 60 days, or one time during the recovery period, then $860 / 2 = 430$ acres (five 100 acre sites) would be required. The number of sites varies with size, distance from source, speed of reduction (mixed debris is slower than clean woody debris) and removal urgency. If existing landfill space is not readily available to immediately start reducing site volumes, additional sites will be required. Public owned property should be considered first, then pre-designated leases that were advanced planned with landowners is an alternative. Pre-designation of sites is critical to expedite initial debris removal operations.

The USACE commonly removes approximately 70% of the total volume generated, with local governments, volunteer groups and private individuals removing the remainder.

If 7 million cubic yards are estimated, the USACE could estimate removing approximately 70% or 4.9 million cubic yards.



R-3-1



The debris removed will consist of two broad categories, clean woody construction and demolition (C&D) debris. The clean debris will come early in the removal process, as residents and local governments clear yards and right-of-ways. The debris removal mission will be more efficient, if debris is segregated, as much as possible, at the origin. i.e. along the right-of-ways, according to the type debris. The public should be informed regarding debris segregation, as soon as possible, after the storm. (See Appendix D, Samples of Public Service Announcements.) The most effective process is to establish time frames for removal, such as the first 7-10 days clean woody debris would be picked up; this would be followed by all other debris that would be required to be segregated, including metals, non-metals and household hazardous waste.

The most common hurricane generated debris will consist of the following:

- 30% Clean woody debris
- 70% Mixed C&D of the 70% mixed C&D,
- 42% Burnable but requires sorting
- 5% Soil
- 15% Metals
- 38% Landfilled

Based on the example above, 7,000,000 cubic yards would breakdown, as follows:

- 2,100,000 cubic yards of clean woody debris
- 4,900,000 cubic yards of mixed C&D

The 4,900,000 cubic yards of mixed C&D would breakdown, as follows:

- 2,058,000 cubic yards of burnable that requires sorting or landfill
- 245,000 cubic yards of Soil
- 735,000 cubic yards of Metals
- 1,862,000 cubic yards of landfill

Burning will produce about 95% reduction. The use of chippers and/or tub grinders are of less environmental concern than burning to reduce the amount of debris. The chips/mulch produced has agricultural value, as well as being easily converted to pelletized fuel. Chipping and grinding reduces the debris volume, on a 1:4 ratio (4 cubic yards is reduced to 1 cubic yard) of by 75%. The rate of burning versus chipping/grinding is basically equal; it is about 200 cubic yards per hour. However, chipping requires on-site storage and disposal of the chips or mulch.



Questions related to the USACE Model should be directed to the Emergency Management Branch, United States Army Corps of Engineers (USACE):

United States Army Corps of Engineers - Norfolk District
ATTN: CENAO-TS-EOC
803 Front Street, Norfolk, VA 23510-1095

Carl S. Ballard Jr.
Chief, Emergency Management
carl.s.ballard@usace.army.mil
Ph: 757-441-7254
Fax: 757-441-7833

Jan I. Van Houten
Emergency Management Specialist
jan.i.vanhouten@usace.army.mil
Ph: 757-441-7575
Fax: 757-441-7833



Regional Infrastructure and Debris Management

Emergency Planning Model

Appendix R-4

Debris Estimates for Hampton Roads

Cities and Counties

(USACE Calculation Method)

The following values (Cubic Yards) are an estimate of the amount of debris that the Hampton Roads jurisdictions may anticipate, after a Dry Storm or a Wet Storm, for a Category 1 through 5 (lesser to worse case) hurricane, based upon the USACE Calculation Method.

Dry Storm

City or County	Estimated Debris (Cubic Yards)				
	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5
Chesapeake	179,518	718,072	2,333,735	4,487,951	7,180,722
Franklin	10,920	43,680	141,960	273,000	436,800
Gloucester					
Hampton					
Isle of Wight					
James City					
Newport News	175,500	702,000			
Norfolk	304,200	1,216,800	3,954,600	7,605,000	12,168,000
Poquoson	12,425	49,713	161,589	310,741	497,193
Portsmouth	116,610	466,440	1,515,930	2,915,250	4,664,400
Southampton	17,412	69,648	226,356	435,300	696,480
Suffolk					
Surry					
Virginia Beach	520,000	2,060,000	6,710,000	12,900,000	20,640,000
Williamsburg					
York					

Wet Storm



R-4-1



City or County	Estimated Debris (Cubic Yards)				
	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5
Chesapeake	233,373	933,494	3,033,855	5,834,336	9,334,938
Franklin	14,196	56,784	184,548	354,900	567,840
Gloucester					
Hampton	243,360	973,440	3,163,680	6,084,000	9,734,400
Isle of Wight					
James City					
Newport News			2,965,950	5,703,750	9,126,000
Norfolk	395,460	1,581,840	5,140,980	9,886,500	15,818,400
Poquoson	16,154	64,628	210,063	403,973	646,356
Portsmouth	151,593	606,372	1,970,709	3,789,825	6,063,720
Southampton	22,635	90,542	294,262	565,890	905,424
Suffolk					
Surry					
Virginia Beach	670,000	2,680,000	8,720,000	16,770,000	26,830,000
Williamsburg					
York					

- Notes 1. The City of Norfolk based its estimates on 90,000 households and a vegetative characteristic factor of 1.3 and a commercial, business and industry factor of 1.3.
2. See additional information provided by Virginia Beach on next page.
3. The City of Portsmouth based its estimates on 29,900 households and a vegetative characteristic factor of 1.5 and a commercial, business and industry factor of 1.3.
4. The City of Newport News provided a breakdown of their calculations within the enclosed Excel spreadsheet.
5. The estimates for the remaining cities and counties will be added upon receipt.



City of Virginia Beach

	Total Debris	Clean Woody	Burnable C&D	Soil (2%)	Metals	Landfill
Category 1 74-95 MPH						
Dry	0.52					
Wet	0.67					
Category 2 96-110 MPH						
Dry	2.06					
Wet	2.68					
Category 3 111-130 MPH						
Dry	6.71	2.01	2.01	0.14	0.67	1.88
Wet	8.72	2.62	2.62	0.17	0.87	2.44
Category 4 131-155 MPH						
Dry	12.90	3.87	3.87	0.26	1.29	3.61
Wet	16.77	5.03	5.03	0.33	1.68	4.70
Category 5 Greater than 155 MPH						
Dry	20.64	6.19	6.19	0.42	2.06	5.78
Wet	26.83	8.05	8.05	0.54	2.68	7.51



City of Newport News

			CITY OF NEWPORT NEWS DEBRIS MODEL 2001 Based on 45,000 Family Households				
Table 1			Hurricane Category / Cubic Yards (cy) of Debris (C)				
			1	2	3	4	5
Storm Precipitation	None to Light (1.0)	2.00	8.00	N/A	N/A	N/A	
Characteristic (S)	Medium to Heavy (1.3)	N/A	N/A	33.80	65.00	104.00	
Table 2			Vegetation Characteristic (V)				
			Light (1.1)	Medium (1.3)	Heavy (1.5)		
Commercial/Business	Light (1.0)	1.10	1.30	1.50			
Industrial Characteristic	Medium (1.2)	1.32	1.56	1.80			
(B)	Heavy (1.3)	1.43	1.69	1.95			
Table 3			Number from Table 1				
			CAT-1	CAT-2	CAT-3	CAT-4	CAT-5
		*	2.00	8.00	33.80	65.00	104.00
		1.10	99.00	396.00	1,673.10	3,217.50	5,148.00
		1.30	117.00	468.00	1,977.30	3,802.50	6,084.00
		1.32	118.80	475.20	2,007.72	3,861.00	6,177.60
		1.43	128.70	514.80	2,175.03	4,182.75	6,692.40
		1.50	135.00	540.00	2,281.50	4,387.50	7,020.00
		1.56	140.40	561.60	2,372.76	4,563.00	7,300.80
		1.69	152.10	608.40	2,570.49	4,943.25	7,909.20
		1.80	162.00	648.00	2,737.80	5,265.00	8,424.00
		1.95	175.50	702.00	2,965.95	5,703.75	9,126.00



Attachment K: Permit Reference List

Permit Reference List

Business	Location	City State & Zip	Contact Info	Business Type
Air Quality Permits	5636 Southern Blvd (Tidewater Regional Office)	Virginia Beach, VA 23462	757-518-2000	Virginia Department of Environmental Quality
Board of Zoning Appeals	810 Union Street, 5th Floor City hall Building	Norfolk, VA 23510	757-664-4752/ 757-441-1569	Department of City Planning and Codes Administration
Bulk Refuse Containers	830 Southampton Ave.	Norfolk, VA 23510	757-683-2712/ 757-683-8878	Bureau of Environmental Health Services
Business License	Commissioner of Revenue (810 Union Street) 1st Floor	Norfolk, VA 23510	757-441-2270/ 757-441-1286	Commissioner of the Revenue
Care Facilities	Department of Social Services, Pembroke 4, Suite 300	Norfolk, VA 23510	757-683-2712/ 757-683-8878	Department of Public Health
Chesapeake Bay Preservation District (CBPA)	810 Union Street, 4th Floor City Hall Building	Norfolk, VA 23510	757-664-4368/ 757-664-4370	Department of Planning and Code Administration
City Purchasing Agent	Granby Municipal Building, 400 Granby Street 4th floor	Norfolk, VA 23510	757-664-4787/ 757-664-4021	Purchasing Agent's office
Construction Permits	Granby Municipal Building, 400 Granby Street	Norfolk, VA 23510	757-664-6565/ 757-664-6899	Department of City Planning and Codes Administration
Design Review Process	810 Union Street, 5th Floor City hall Building	Norfolk, VA 23510	757-664-4752/ 757-441-1569	Department of Planning and Codes Administration
Downtown Development Certificate	810 Union Street, 5th Floor City Hall Building	Norfolk, VA 23510	757-664-4752/ 757-441-1569	Department of City Planning & Codes Administration/ Bureau of Development Services
Driveway Permits	810 Union Street, 2nd floor City Hall Building	Norfolk, VA 23510	757-664-7306/ 757-664-4696	Department of Public Works
Emergency Debris Wastepile Permit	5636 Southern Blvd (Tidewater Regional Office)	Virginia Beach, VA 23462	757-518-2000	Virginia Department of Environmental Quality
Environmental Storm Water Management	2233 McKann Ave.	Norfolk, VA 23509	757-823-4000	Division of Environmental Storm Water Management
Erosion and Sediment Control Process	810 Union Street, 4th Floor City Hall Building	Norfolk, VA 23510	757-664-4368/ 757-664-4370	Department of Planning and Codes Administration
Flood Zone Determination Process	Granby Municipal Building, 400 Granby Street	Norfolk, VA 23510	757-664-6502/ 757-664-6899	Department of City Planning and Codes Administration
Freon Removal Permits	5636 Southern Blvd (Tidewater Regional Office)	Virginia Beach, VA 23462	757-518-2000	Virginia Department of Environmental Quality

City of Norfolk Debris Management Plan

Business	Location	City State & Zip	Contact Info	Business Type
Historic District	810 Union Street, 5th Floor City Hall Building	Norfolk, VA 23510	757-664-4752/ 757-441-1569	Department of City Planning & Codes Administration/ Bureau of Zoning Services
Household Hazardous Waste (HHW) Permit	5636 Southern Blvd (Tidewater Regional Office)	Virginia Beach, VA 23462	757-518-2000	Virginia Department of Environmental Quality
Occupancy Permits	Granby Municipal Building, 400 Granby Street	Norfolk, VA 23510	757-664-6500/ 757-664-6898	Department of City Planning and Codes Administration
Parking	222 E. Main Street/ 230 E. Main Street	Norfolk, VA 23510	757-441-2561/ 757-441-2419	Division of Parking
Pedestrian Commercial Overlay District	810 Union Street, 5th Floor City hall Building	Norfolk, VA 23510	757-664-4752/ 757-441-1569	Department of Planning and Codes Administration/ Bureau of Development Services
Preliminary/ Final Subdivision Review	810 Union Street, 7th Floor City Hall Building	Norfolk, VA 23510	757-664-4673/ 757-664-4603	Department of Public Works/ Division of Surveys
Rat Free Certificates for Demolition	830 Southampton Ave.	Norfolk, VA 23510	757-683-2712/ 757-683-8878	Department of Public Health/ Bureau of environmental health Services
Rental of City Buildings & Facilities	Scope Plaza, 201 E. Brambleton Ave.	Norfolk, VA 23510	757-664-6464/ 757-664-6990	Civic Facilities Administration
Rezoning	810 Union Street, 5th Floor City hall Building	Norfolk, VA 23510	757-664-4752/ 757-441-1569	Department of City Planning and Codes Administration
Right Of Way Encroachment Permit	810 Union Street, 7th Floor City Hall Building	Norfolk, VA 23510	757-664-4673/ 757-664-4603	Department of Public Works /Division of Surveys
Sign/Zoning Certificate Process	810 Union Street, 5th Floor City hall Building	Norfolk, VA 23510	757-664-4752/ 757-441-1569	Department of City Planning and Codes Administration
Site Plan Review Process	810 Union Street, 5th Floor City Hall Building	Norfolk, VA 23510	757-664-4752/ 757-441-1569	Department of Planning and Codes Administration
Special Exception Process	810 Union Street, 5th Floor City Hall Building	Norfolk, VA 23510	757-664-4752/ 757-441-1569	Department of City Planning & Codes Administration. Bureau of Zoning Services
Street Closure Process -permanent	810 Union Street, 5th Floor City hall Building	Norfolk, VA 23510	757-664-4752/ 757-441-1569	Department of City Planning and Codes Administration
Tree Protection	2839 Dana Street	Norfolk, VA 23509	757-441-2435/ 757-441-5141	Department of Recreation, Parks & General Services/ Bureau of Parks & Forestry

City of Norfolk Debris Management Plan

Business	Location	City State & Zip	Contact Info	Business Type
Waste Management Fees & Services	1176 Pineridge road	Norfolk, VA 23502	757-441-5813/ 757-441-5914	Division of Waste Management
Waste Processing & Recycling permit	5636 Southern Blvd (Tidewater Regional Office)	Virginia Beach, VA 23462	757-518-2000	Virginia Department of Environmental Quality
Water and Sewer Hookups	Granby Municipal Building, 400 Granby Street	Norfolk, VA 23510	757-664-6701/ 757-664-6707	Department of Utilities
Water Quality Permits	5636 Southern Blvd (Tidewater Regional Office)	Virginia Beach, VA 23462	757-518-2000	Virginia Department of Environmental Quality
Wetland/Dune Permit Process	810 Union Street, 4th Floor City Hall Building	Norfolk, VA 23510	757-664-4368/ 757-664-4370	Department of Planning and Codes Administration

Attachment L: Right-of-Entry Agreement

Right of Entry Agreement

I/We _____, the owner(s) of the property
commonly _____ identified _____ as

(street)

State of _____

(city/town)

(county)

do hereby grant and give freely and without coercion, the right of access and entry to said property in the County/City of _____, its agencies, contractors, and subcontractors thereof, for the purpose of removing and clearing any or all storm-generated debris of whatever nature from the above described property.

It is fully understood that this permit is not an obligation to perform debris clearance. The undersigned agrees and warrants to hold harmless the City/County of _____, State of _____, its agencies, contractors, and subcontractors, for damage of any type, whatsoever, either to the above described property or persons situated thereon and hereby release, discharge, and waive any action, either legal or equitable that might arise out of any activities on the above described property. The property owner(s) will mark any storm damaged sewer lines, water lines, and other utility lines located on the described property.

I/We (have_____, have not_____) (will_____, will not_____) received any compensation for debris removal from any other source including SBA, private insurance, individual and family grant program or any other public assistance program. I will report for this property any insurance settlements to me or my family for debris removal that has been performed at government expense. For the considerations and purposes set forth herein, I set my hand this _____ day of _____, 20____.

Witness

Owner

Owner

Telephone Number and Address